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ABSTRACT

In this appendix to the Content Area Reading Project report, five instruments administered to teacher participants are examined: two attitude surveys, a skill test, a questionnaire to obtain demographic information, and the Purdue Teacher Opinionaire, which is a measure of teacher morale. This work first presents the attitude surveys, skill test, and opinionaire, and then examines the following topics: purpose, background, development, reliability, and validity of each of the five instruments, selection of the sample population for the project, treatment measures, evaluation measures, and limitations of the study. Findings based on data gathered during the project are then presented under the following general headings: characteristics of the junior high school teachers, attitudes among the junior high school teachers, morale levels among the junior high school teachers, skill levels among the junior high school teachers, and characteristics, attitudes, morale levels, and skill levels in the teachers of adults. Numerous tables are included in the appendix. (GW)

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The Pennsylvania State University
College of Education
Division of Continuing Education

THE CONTENT AREA READING PROJECT:

AN INSERVICE EDUCATION PROGRAM FOR

JUNIOR HIGH SCHOOL TEACHERS AND TEACHERS OF ADULTS

Appendix A

The Instruments and Their Development: Presentation and Analysis of the Findings

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Final Report
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Pennsylvania Department of Education

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SITUATIONS SURVEY: TEACHING READING IN CONTENT AREAS

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INSTRUCTIONS:

In this part of the survey, we are interested in your reactions to a series of hypothetical classroom situations and plans that various content area teachers might implement in these situations. Read each situation and plan and, on the basis of your experience as a classroom teacher, rate the plan on each of the scales listed below the item.

Here are the different scales you will be using:

practical ____:____:____:____:____:____:____ impractical
ineffective ____:____:____:____:____:____:____ effective
inefficient ____:____:____:____:____:____:____ efficient
useful ____:____:____:____:____:____:____ useless
desirable ____:____:____:____:____:____:____ undesirable

You are then asked to rate each plan on the basis of its feasibility in the classroom. For this part of the survey, you will also use a scale. This is how the scale will appear.

feasible ____:____:____:____:____:____:____ not feasible

Finally, you are asked to respond on a scale which indicates how skilled you are at this time for executing a plan like the one described. Here is how this will appear:

skilled ____:____:____:____:____:____:____ unskilled

Here is how to use the scales:

If you feel that the plan or question is very closely related to one end of the scale, you should place your mark like this:

practical _X_:____:____:____:____:____:____ impractical

OR

practical ____:____:____:____:____:____:_X_ impractical

If you feel that the plan or question is quite closely related to one end of the scale (but not extremely), you should place your mark like this:

practical ____:_X_:____:____:____:____:____ impractical

OR

practical ____:____:____:____:____:_X_:____ impractical

If you feel that the plan or question is only slightly related to one side or the other, place your mark this way:

practical ____:____:_X_:____:____:____:____ impractical

OR

practical ____:____:____:____:_X_:____:____ impractical

INSTRUCTIONS: (continued)

Finally, if you feel that the plan or question is equally associated with either side of the scale or if you feel that the scale is completely irrelevant or unrelated to the plan, place your mark like this:

practical ____:____:____:_X_:____:____:____ impractical

IMPORTANT:

1. Do not place your mark between the boundaries; mark the middle of the spaces.
2. Do not omit any of the scales; note that there are seven scales to mark for each item.
3. Do not put more than one mark on a scale.

The following is a sample item to demonstrate the format of this survey:

SAMPLE ITEM:

SITUATION: A home economics teacher is preparing questions to ask during a guided discussion about menu planning, a topic on which the students have been doing independent reading since the last class meeting.

PLAN: The teacher plans to ask questions that represent various levels of comprehension during the discussion.

practical ____:____:____:____:____:____:____ impractical
ineffective ____:____:____:____:____:____:____ effective
inefficient ____:____:____:____:____:____:____ efficient
useful ____:____:____:____:____:____:____ useless
desirable ____:____:____:____:____:____:____ undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible ____:____:____:____:____:____:____ not feasible

How skilled are you at this time for executing a plan like the one above?

skilled ____:____:____:____:____:____:____ unskilled

You will find that a variety of content areas are represented in the hypothetical situations that follow. Rate each plan according to its appropriateness for the content area described even though this may differ from the one in which you have had experience.

INSTRUCTIONS: (continued)

Sometimes you may feel as though you've had the same item before on the inventory. This will not be the case so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the inventory. Make each item a separate and independent judgment. Work at a fairly high speed through this inventory. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

PLACE YOUR RESPONSES IN THIS BOOKLET. DO NOT USE A SEPARATE ANSWER SHEET.

PART ONE

1. SITUATION: A home economics teacher is preparing a unit on nutrition based on a chapter from a text labeled at the students' grade level.

   PLAN: The teacher plans to construct a short group diagnostic instrument based on the chapter which will indicate which students will be able to read the chapter on their own and which students will be unable to read the chapter at all or will need guidance in doing so.

practical	____:____:____:____:____:____:____	impractical
ineffective	____:____:____:____:____:____:____	effective
inefficient	____:____:____:____:____:____:____	efficient
useful	____:____:____:____:____:____:____	useless
desirable	____:____:____:____:____:____:____	undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible	____:____:____:____:____:____:____	not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled	____:____:____:____:____:____:____	unskilled

2. SITUATION: A math teacher is preparing a worksheet of word problems for a class of students who have previously had difficulty with this type of work.

   PLAN: Before assigning the worksheet, the teacher plans to work with the students on such comprehension skills as identifying relevant details, following a sequence, and using efficient problem solving techniques.

practical	____:____:____:____:____:____:____	impractical
ineffective	____:____:____:____:____:____:____	effective
inefficient	____:____:____:____:____:____:____	efficient
useful	____:____:____:____:____:____:____	useless
desirable	____:____:____:____:____:____:____	undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible	____:____:____:____:____:____:____	not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled	____:____:____:____:____:____:____	unskilled

PART ONE (continued)

3. SITUATION: An English teacher is preparing to teach a short story from the anthology suggested in the curriculum guide.

PLAN: The teacher plans to assign those who are competent readers to read the story on their own and engage in several individualized assignments. The less competent readers will read the story in a guided reading lesson during which the teacher will provide considerable help in vocabulary, concept development, and comprehension.

practical	_____:_____:_____:_____:_____:_____:_____	impractical
ineffective	_____:_____:_____:_____:_____:_____:_____	effective
inefficient	_____:_____:_____:_____:_____:_____:_____	efficient
useful	_____:_____:_____:_____:_____:_____:_____	useless
desirable	_____:_____:_____:_____:_____:_____:_____	undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible	_____:_____:_____:_____:_____:_____:_____	not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled	_____:_____:_____:_____:_____:_____:_____	unskilled

4. SITUATION: A social studies teacher is making plans for the content to be covered before ordering new reading materials.

PLAN: The teacher intends to include informal assessment of the reading levels of students before selecting materials to order.

practical	_____:_____:_____:_____:_____:_____:_____	impractical
ineffective	_____:_____:_____:_____:_____:_____:_____	effective
inefficient	_____:_____:_____:_____:_____:_____:_____	efficient
useful	_____:_____:_____:_____:_____:_____:_____	useless
desirable	_____:_____:_____:_____:_____:_____:_____	undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible	_____:_____:_____:_____:_____:_____:_____	not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled	_____:_____:_____:_____:_____:_____:_____	unskilled

PART ONE (continued)

5. SITUATION: An English teacher is preparing a unit on the short story with emphasis on the structure of a good story.

PLAN: The teacher plans to divide the class into groups based on reading ability and to assign each a story of appropriate difficulty level. When the groups have completed their reading, the whole class will discuss common elements of structure in short stories.

practical ____:____:____:____:____:____:____ impractical
ineffective ____:____:____:____:____:____:____ effective
inefficient ____:____:____:____:____:____:____ efficient
useful ____:____:____:____:____:____:____ useless
desirable ____:____:____:____:____:____:____ undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible ____:____:____:____:____:____:____ not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled ____:____:____:____:____:____:____ unskilled

6. SITUATION: A social studies teacher observes that students are having difficulty comprehending the textbook.

PLAN: The teacher identifies several comprehension skills the students need in reading the text and uses informal assessment to determine which students need instruction in these skills.

practical ____:____:____:____:____:____:____ impractical
ineffective ____:____:____:____:____:____:____ effective
inefficient ____:____:____:____:____:____:____ efficient
useful ____:____:____:____:____:____:____ useless
desirable ____:____:____:____:____:____:____ undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible ____:____:____:____:____:____:____ not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled ____:____:____:____:____:____:____ unskilled

PART ONE (continued)

7. SITUATION: A math teacher is planning a unit on comparative measurement which includes problems involving the interpretation of charts and graphs.

PLAN: The teacher plans to spend some time instructing students in the skills needed to interpret various charts and graphs before assigning the math problems in the unit.

practical ____:____:____:____:____:____:____ impractical
ineffective ____:____:____:____:____:____:____ effective
inefficient ____:____:____:____:____:____:____ efficient
useful ____:____:____:____:____:____:____ useless
desirable ____:____:____:____:____:____:____ undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible ____:____:____:____:____:____:____ not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled ____:____:____:____:____:____:____ unskilled

8. SITUATION: An English teacher has identified several students as lacking skill in figuring out words containing prefixes and suffixes.

PLAN: The teacher plans to take part of several class periods to instruct these students in this skill while the rest of the class is involved in other meaningful activities. They will then practice utilizing this skill independently by using self-instructional materials prepared by the teacher.

practical ____:____:____:____:____:____:____ impractical
ineffective ____:____:____:____:____:____:____ effective
inefficient ____:____:____:____:____:____:____ efficient
useful ____:____:____:____:____:____:____ useless
desirable ____:____:____:____:____:____:____ undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible ____:____:____:____:____:____:____ not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled ____:____:____:____:____:____:____ unskilled

PART ONE (continued)

9. SITUATION: A health education teacher is concerned that students are not getting the essential information from assigned chapters.

PLAN: The teacher thinks that if students could make brief outlines, take notes, or summarize the chapters, their comprehension might be increased. The teacher devises a brief diagnostic exercise for determining whether or not students are able to perform these skills efficiently.

practical	____	: ____	: ____	: ____	: ____	: ____	: ____	impractical
ineffective	____	: ____	: ____	: ____	: ____	: ____	: ____	effective
inefficient	____	: ____	: ____	: ____	: ____	: ____	: ____	efficient
useful	____	: ____	: ____	: ____	: ____	: ____	: ____	useless
desirable	____	: ____	: ____	: ____	: ____	: ____	: ____	undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible	____	: ____	: ____	: ____	: ____	: ____	: ____	not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled	____	: ____	: ____	: ____	: ____	: ____	: ____	unskilled

10. SITUATION: A social studies teacher is planning to teach a unit on the election process in the United States.

PLAN: In order to accommodate the different reading levels in the classroom, the teacher has gathered a wide variety of materials concerned with the topic and has made certain that material at several reading levels is represented.

practical	____	: ____	: ____	: ____	: ____	: ____	: ____	impractical
ineffective	____	: ____	: ____	: ____	: ____	: ____	: ____	effective
inefficient	____	: ____	: ____	: ____	: ____	: ____	: ____	efficient
useful	____	: ____	: ____	: ____	: ____	: ____	: ____	useless
desirable	____	: ____	: ____	: ____	: ____	: ____	: ____	undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible	____	: ____	: ____	: ____	: ____	: ____	: ____	not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled	____	: ____	: ____	: ____	: ____	: ____	: ____	unskilled

PART ONE (continued)

11. SITUATION: A team of English and social studies teachers is making plans for guiding students in the writing of a research paper on one aspect of the Depression Years.

PLAN: The teachers plan to devise an inventory of various study skills (such as using the card catalog, using the Reader's Guide to Periodical Literature, compiling a bibliography, and writing footnotes) students will need to use in completing this assignment in order to assess which students have or have not mastered these skills.

practical ____:____:____:____:____:____:____ impractical
ineffective ____:____:____:____:____:____:____ effective
inefficient ____:____:____:____:____:____:____ efficient
useful ____:____:____:____:____:____:____ useless
desirable ____:____:____:____:____:____:____ undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible ____:____:____:____:____:____:____ not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled ____:____:____:____:____:____:____ unskilled

12. SITUATION: A vocational teacher is setting up orientation sessions for students without previous experience in the wood-working shop. During a nine week period in this shop, each student will construct one item using written directions following teacher demonstrations of equipment.

PLAN: The teacher plans to examine each set of written directions, selecting those words which occur frequently in most of the plans for use in a group vocabulary lesson to be taught as part of the orientation.

practical ____:____:____:____:____:____:____ impractical
ineffective ____:____:____:____:____:____:____ effective
inefficient ____:____:____:____:____:____:____ efficient
useful ____:____:____:____:____:____:____ useless
desirable ____:____:____:____:____:____:____ undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible ____:____:____:____:____:____:____ not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled ____:____:____:____:____:____:____ unskilled

STATEMENTS SURVEY: TEACHING READING IN CONTENT AREAS

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Eunice N. Askov
Mary M. Dupuis

From the Content Area Reading Project, sponsored by the Bureau of Vocational Education, Division of Adult Education, Pennsylvania Department of Education

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INSTRUCTIONS:

The following are statements about instructional procedures of content area teachers. The intent of this survey is to determine how you feel about these procedures in relation to your own teaching situation.

Read each statement and rate it according to your experience in your classroom. Please note that the general term teachers which appears in each statement is meant to include all teachers in the content areas such as in English, language education, social studies, science, math, home economics, health education, vocational education, art education, music education, reading, and adult education.

You are to rate each statement on the following scale which appears below each item; the scale appears for each item in your booklet, but do not mark the booklet. Use the separate answer sheet provided.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

Here is how to use the scale:

If you "strongly disagree" with the statement, fill in the space marked (a) on your answer sheet; if you "slightly disagree" with the statement, fill in the space marked (b) on your answer sheet; if you are "not sure" about the statement, fill in the space marked (c) on your answer sheet; if you "slightly agree" with the statement, fill in the space marked (d) on your answer sheet; and if you "strongly agree" with the statement, fill in the space marked (e) on your answer sheet.

REMEMBER: DO NOT PLACE YOUR RESPONSES IN THIS BOOKLET. USE THE SEPARATE ANSWER SHEET PROVIDED.

PART TWO

1. It is important that teachers be competent in assessing the general reading levels of students.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

2. It is inappropriate for teachers to devote class instruction time to vocabulary development.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

3. All teachers should be able to provide alternative means by which students can obtain information they may be unable to read.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

4. It is inappropriate for teachers to assess students' specific comprehension skills such as making inferences, following sequence, detecting bias or recognizing main ideas.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

5. It is important that teachers provide a variety of materials which cover similar content but which represent a wide range of readability.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

6. It is important that teachers be able to identify those students who are having trouble figuring out unfamiliar words.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

7. It is not important for teachers to conduct guided or directed reading lessons for students unable to read the text on their own.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

PART TWO (continued)

8. It is not necessary for teachers to develop and use diagnostic instruments for assessing mastery of skills needed in their subject area(s).

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

9. Teachers should include questions at various comprehension levels in class discussions, worksheets, study guides and tests.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

10. It is not important for teachers to be able to develop and use instruments for diagnosing mastery of reading skills.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

11. Teachers should not spend class instruction time teaching students study skills.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

12. It is desirable that teachers determine for which students a reading selection is or is not appropriate.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

13. Teachers should teach those reading skills needed in their subject area(s).

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

14. Only reading teachers should provide materials written at various reading levels for groups of students with differing reading abilities.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

PART TWO (continued)

15. Teachers should know how to assess mastery of the comprehension skills needed in their subject area(s).

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

16. Only reading teachers should be concerned with diagnosing vocabulary development of students beyond the elementary school level.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

17. It is necessary that teachers be able to identify those reading skills specifically needed in their subject areas.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

18. Content teachers should not need to develop skill in assessing student strengths and weaknesses in various study skills.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

19. It is not desirable for teachers to conduct small group lessons in specific reading skills.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

20. It is appropriate for teachers to identify those students who are experiencing reading difficulties because of language differences such as a dialect or second language.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

Forms A and B Combined

A.3

THE PURDUE TEACHER OPINIONAIRE

#1 2

Prepared by Ralph R. Bentley and Averno M. Rempel

This instrument is designed to provide you the opportunity to express your opinions about your work as a teacher and various school problems in your particular school situation. There are no right or wrong responses, so do not hesitate to mark the statements frankly.

FORM A USE WHEN RECORDING RESPONSES ON OPINIONAIRE

DIRECTIONS FOR RECORDING RESPONSES ON OPINIONAIRE

Fill in the information below. You will notice that there is no place for your name. Please do not record your name. All responses will be strictly confidential and results will be reported by groups only. **DO NOT OMIT ANY ITEMS.**

School_____ Date_____
month day year

Age_____ Sex_____ Highest Degree Completed_____

Read each statement carefully. Then indicate whether you agree, probably agree, probably disagree, or disagree with each statement. Mark your answers in the following manner:

If you **agree** with the statement, circle "A" ..... (A) PA PD D

If you are somewhat uncertain, but probably agree with the statement, circle "PA" ..... A (PA) PD D

If you are somewhat uncertain, but **probably disagree** with the statement, circle "PD" ..... A PA (PD) D

If you **disagree** with the statement, circle "D" ..... A PA PD (D)

FORM B USE WHEN RECORDING RESPONSES ON SEPARATE RESPONSE CARD

DIRECTIONS FOR RECORDING RESPONSES ON RESPONSE CARD

A separate answer card is furnished for your responses. Fill in the information requested on the answer card. You will notice that there is no place for your name. Please do not record your name. All responses will be strictly confidential and results will be reported by groups only. **DO NOT OMIT ANY ITEMS.**

Read each statement carefully. Then indicate whether you agree, probably agree, probably disagree, or disagree with each statement. Mark your answers on the separate answer card in the following manner:

	A	PA	PD	D
If you **agree** with the statement, blacken the space	■	PA	PD	D
If you are somewhat uncertain, but **probably agree** with the statement, blacken the space	A	■	PD	D
If you are somewhat uncertain, but **probably disagree** with the statement, blacken the space	A	PA	■	D
If you **disagree** with the statement, blacken the space	A	PA	PD	■

All marks should be heavy and completely fill the answer space. If you change a response, erase the first mark completely. Use No. 2 or special mark - sense pencil. Make no stray marks on the answer card. Please do not mark this booklet.

24. Teaching enables me to make my greatest contribution to society ..... A PA PD D

25. The curriculum of our school is in need of major revisions ..... A PA PD D

26. I love to teach ..... A PA PD D

27. If I could plan my career again, I would choose teaching ..... A PA PD D

28. Experienced faculty members accept new and younger members as colleagues ..... A PA PD D

29. I would recommend teaching as an occupation to students of high scholastic ability ..... A PA PD D

30. If I could earn as much money in another occupation, I would stop teaching ..... A PA PD D

31. The school schedule places my classes at a disadvantage ..... A PA PD D

32. Within the limits of financial resources, the school tries to follow a generous policy regarding fringe benefits, professional travel, professional study, etc ..... A PA PD D

33. My principal makes my work easier and more pleasant ..... A PA PD D

34. Keeping up professionally is too much of a burden ..... A PA PD D

35. Our community makes its teachers feel as though they are a real part of the community ..... A PA PD D

36. Salary policies are administered with fairness and justice ..... A PA PD D

37. Teaching affords me the security I want in an occupation ..... A PA PD D

38. My school principal understands and recognizes good teaching procedures ..... A PA PD D

39. Teachers clearly understand the policies governing salary increases ..... A PA PD D

40. My classes are used as a "dumping ground" for problem students ..... A PA PD D

41. The lines and methods of communication between teachers and the principal in our school are well developed and maintained ..... A PA PD D

42. My teaching load in this school is unreasonable ..... A PA PD D

43. My principal shows a real interest in my department ..... A PA PD D

44. Our principal promotes a sense of belonging among the teachers in our school ..... A PA PD D

45. My heavy teaching load unduly restricts my nonprofessional activities ..... A PA PD D

46. I find my contacts with students, for the most part, highly satisfying and rewarding ..... A PA PD D

47. I feel that I am an important part of this school system ..... A PA PD D

48. The competency of the teachers in our school compares favorably with that of teachers in other schools with which I am familiar ..... A PA PD D

Continue with item 49 on next page

73. My principal has a reasonable understanding of the problems connected with my teaching assignment ..... A PA PD D

74. I feel that my work is judged fairly by my principal ..... A PA PD D

75. Salaries paid in this school system compare favorably with salaries in other systems with which I am familiar ..... A PA PD D

76. Most of the actions of students irritate me ..... A PA PD D

77. The cooperativeness of teachers in our school helps make my work more enjoyable ..... A PA PD D

78. My students regard me with respect and seem to have confidence in my professional ability ..... A PA PD D

79. The purposes and objectives of the school cannot be achieved by the present curriculum ..... A PA PD D

80. The teachers in our school have a desirable influence on the values and attitudes of their students ..... A PA PD D

81. This community expects its teachers to meet unreasonable personal standards ..... A PA PD D

82. My students appreciate the help I give them with their school work ..... A PA PD D

83. To me there is no more challenging work than teaching ..... A PA PD D

84. Other teachers in our school are appreciative of my work ..... A PA PD D

85. As a teacher in this community, my nonprofessional activities outside of school are unduly restricted ..... A PA PD D

86. As a teacher, I think I am as competent as most other teachers ..... A PA PD D

87. The teachers with whom I work have high professional ethics ..... A PA PD D

88. Our school curriculum does a good job of preparing students to become enlightened and competent citizens ..... A PA PD D

89. I really enjoy working with my students ..... A PA PD D

90. The teachers in our school show a great deal of initiative and creativity in their teaching assignments ..... A PA PD D

91. Teachers in our community feel free to discuss controversial issues in their classes ..... A PA PD D

92. My principal tries to make me feel comfortable when he visits my classes ..... A PA PD D

93. My principal makes effective use of the individual teacher's capacity and talent ..... A PA PD D

94. The people in this community, generally, have a sincere and wholehearted interest in the school system ..... A PA PD D

Continue with item 95 on next page

CONTENT AREA READING SKILLS INSTRUMENT

These multiple choice questions are designed to test your knowledge of basic materials and methods for teaching reading in various content areas.

Answer each question by marking the letter of the best choice on the answer sheet provided. Please answer each item. Mark answer e if you really do not know the answer and prefer not to guess. We are more interested in what you know than in a lucky guess.

1. Using various levels of questions in class discussions and on study guides, worksheets, and tests is generally thought to help students increase skill in which one of the following areas?

   a. comprehension skills

   b. study skills

   c. word recognition skills

   d. vocabulary skills

   e. I honestly don't know

2. Cloze procedure may be used to devise material to provide students with practice in using which one of the following skills?

   a. map and graph skills

   b. computational skills

   c. sight word skills

   d. context skills

   e. I honestly don't know

3. Read the following statements. Three of them reflect the philosophy that language variations among students should be considered "differences", not "deficits". Which of the statements does not reflect this view?

   a. Many so-called "disadvantaged" students fail to learn because of their inability to produce standard English.

   b. The characteristics of a child's spoken language do not interfere with the development of concepts.

   c. If readers accurately translate a printed message into their own dialects, they are reading successfully.

   d. Teachers' nonacceptance of students' language and culture can lead to poor academic performance.

   e. I honestly don't know

4. A criterion-referenced test will most likely be used to obtain what kind of information?

   a. a student's performance compared to that of national norms

   b. a student's performance compared to that of his or her classmates

   c. the appropriateness of the textbook being used in a content area

   d. determining whether or not students have mastered specific objectives

   e. I honestly don't know

5. A content area teacher has administered an informal reading inventory with a cloze test and has determined which students will probably benefit from a directed reading lesson on a text chapter; which of the following "alternative strategies" might be most appropriate for those students which the test results identified as unable to participate in the directed reading lesson or read the chapter independently?

   a. an oral reading of the chapter in a small group

   b. assignment of a study guide to use as they read silently

   c. use of a taped version of the chapter or a rewritten, simplified version

   d. assignment of a series of questions of varying levels to be answered as they read the chapter individually

   e. I honestly don't know

6. The following subskills represent what general skills area in reading? 1) following a sequence, 2) identifying a main idea or theme, 3) recalling or recognizing details.

   a. dictionary skills

   b. structural analysis skills

   c. word recognition skills

   d. comprehension skills

   e. I honestly don't know

7. Use of the Fry Graph gives teachers an idea of readability according to which of the following criteria?

   a. semantic density

   b. vocabulary difficulty

   c. number of symbolic representations per one hundred word passage

   d. average number of syllables and average length of sentences

   e. I honestly don't know

8. All of the following are necessary components of a Learning Activity Packet except:

   a. pretest

   b. teacher strategies

   c. instructional objectives

   d. student activities

   e. I honestly don't know

9. Mark earns a percentile of 85 on the reading subtest of the Iowa Test of Basic Skills; this means that he:

   a. outscored 85 of every 100 children his age with whom he is being compared

   b. answered 85% of the questions correctly

   c. outscored 15% of the children in a local school district sample

   d. performed in the 4th stanine on this test

   e. I honestly don't know

10. All of the following are necessary components of a textbook evaluation except:

    a. development of a learning activity packet

    b. an assessment of readability

    c. consideration of organization of material

    d. analysis of mechanics and study aids

    e. I honestly don't know

11. If several students appear to be having difficulty figuring out how to pronounce such words as international, interstate, interdependent, population, denomination, and automation, they would likely benefit most from some small group instruction in:

    a. phonic analysis

    b. concept development

    c. structural analysis

    d. context clues

    e. I honestly don't know

12. A cloze procedure constructed from a content area textbook selection might be used diagnostically to determine:

    a. the reliability of the publisher's grade level designation

    b. for which students the selection is of appropriate readability

    c. the semantic density of the selection

    d. whether the selection represents various comprehension levels

    e. I honestly don't know

13. For conducting guided or directed reading lessons the content area teacher would primarily need to consider the students' _____ reading levels.

    a. frustration

    b. independent

    c. recreational

    d. instructional

    e. I honestly don't know

14. The following represent hypothetical questions which most likely tap what level of questioning? 1) What do you think happened just before Mr. Swartz entered the storeroom? 2) What preparation do you think we might make before we begin to build this model according to the directions in your book? 3) What reason can you give for this step of the proof that the angles in a triangle equal 180°?

    a. evaluative

    b. literal

    c. appreciative

    d. inferential

    e. I honestly don't know

15. A study technique often recommended for guiding students in organizing and retaining the major ideas of reading assignments is known as:

    a. preview, survey, overview

    b. SQ3R

    c. differentiating concepts

    d. the maze technique

    e. I honestly don't know

16. An informal reading inventory or a cloze test can give the teacher information about which one of the following student reading abilities?

    a. only the frustration level

    b. the independent, instructional, and frustration levels

    c. only the independent level

    d. the independent and recreational levels

    e. I honestly don't know

17. In general, readability levels for content area textbooks can be considered to be _____ the grade level designations provided by the publishers.

    a. about the same as

    b. slightly lower than

    c. somewhat higher than

    d. exactly the same as

    e. I honestly don't know

18. The following hypothetical questions most likely represent what level of questioning? 1) What town does the main character live in? 2) Where did the boys find the treasure? 3) What two elements combine to form the formula for the chemical to be used in the experiment?

    a. inferential

    b. appreciative

    c. literal

    d. evaluative

    e. I honestly don't know

19. If an assessment procedure indicates that a content area selection represents independent reading for a group of students, which of the following activities is probably the most desirable option for these students?

    a. assignment of the selection (with possibly an additional selection on a related topic) to be read on their own

    b. assignment of the selection to be read during a guided or directed reading lesson

    c. assignment of a listening experience in which the students hear a taped version of the selection

    d. use of a film or filmstrip which deals with the topic in the selection

    e. I honestly don't know

20. An individually-administered informal reading inventory might be more beneficial than a group informal reading inventory if the teacher wishes to obtain what information?

    a. an analysis of a students specific spelling difficulties

    b. an oral sampling of a student's reading

    c. a student's performance on unfamiliar material

    d. a sample of behaviors representing the frustration level

    e. I honestly don't know

21. A group informal reading inventory gives the teacher information about:

    a. both the range of reading ability and the general skill levels among students

    b. the various reading levels of students

    c. the skill strengths and weaknesses of students

    d. the students' ability to use context clues

    e. I honestly don't know

22. An example of a student-directed delivery system for instruction is the:

    a. unit

    b. learning activity packet

    c. cloze procedure

    d. informal reading inventory

    e. I honestly don't know

23. Which of the following most likely represents the hierarchy of levels of comprehension from low to high?

    a. literal, inferential, evaluative, appreciative

    b. evaluative, inferential, literal, appreciative

    c. literal, evaluative, appreciative, inferential

    d. appreciative, evaluative, literal, inferential

    e. I honestly don't know

CHAPTER III*

PROCEDURES

In this chapter, the following aspects of methodology are considered: (1) selection and development of the instruments, (2) selection of population, (3) treatment, (4) evaluation procedures, and (5) limitations of the study.

Selection and Development of Instruments

Five instruments were used in this investigation. Four of these, two attitude surveys, a skills test, and a questionnaire, were developed by the investigator and the fifth, the Purdue Teacher Opinionaire, is a commercially available instrument.

Each instrument is discussed in terms of (1) purpose, (2) background information, (3) development and description, and (4) reliability and validity if applicable.

Statements Survey: Teaching Reading In Content Areas

Purpose: An instrument for assessing participating (experimental) and non-participating (comparison) teachers' attitudes toward incorporating reading instruction in the content areas was needed for use before and after the intervention program (inservice workshops).

Background Information: Sherif and Sherif (1969) state that attitudes can be inferred from:

> what a person selects from the stimulus field out of so many stimuli available and how he evaluates them. Having an attitude becomes a matter of degree, rather than an all-or-none affair. To the extent that a person consistently selects items relevant to the attitude and consistently locates them within categories acceptable or objectionable to him, we may say that his attitude on the issue at hand is stabilized (page 337).

*This chapter and the following are reprinted from Joyce W. Lee, Effects of Inservice Training in Reading on the Attitudes and Skills of Secondary Teachers and Adult Basic Education Teachers (unpublished dissertation, Pennsylvania State University, 1977).

Shaw and Wright (1967) state that the most frequently used method for measuring attitude requires subjects to indicate their agreement or disagreement with a set of statements, a technique first developed by Thurstone (1929) and later modified by Likert in 1932. An increasingly popular technique in attitude measurement is the use of the semantic differential as originally developed by Osgood (1957). Because as Sherif and Sherif (1969) suggest, there is no consensus on the most appropriate type of scale to use for measuring attitudes, it was decided to construct two instruments for this investigation using the more traditional and widely accepted Likert scale format for the first and the newer Osgood technique for the second.

The Likert technique has been used for measuring attitudes on a wide variety of topics. In Likert's original study, for example, the items used concerned attitudes toward Negroes. On a typical Likert-type instrument, the subject is asked to respond to a number of statements by selecting one alternative, usually from a group of five to seven choices ranging from "strongly agree" to "strongly disagree" with one neutral choice such as "undecided" or "no opinion." Thus each item is a rating device which reveals both the direction (positive or negative) and the intensity (strong, moderate, neutral) the subject attaches to the statement. Each choice of the five to seven alternatives is assigned a numerical value and an overall test score is the summated score of the choices made by the subject. A high score then is generally taken as an indication of an attitude close to one extreme and a low score, an attitude close to the opposite extreme.

Sherif and Sherif (1969) make the following suggestions for scale construction using the Likert technique:

1. Statements should be formulated on the basis of empirical observations of different viewpoints on the issue in questions.
2. Items should be clear-cut statements representing definite favorable or unfavorable stands.
3. An equal number of pro and con statements should be included.
4. While statements on the scale should pertain to a single issue, such a scale should not contain statements on which all persons in a sample will agree or disagree.
5. Statements should pertain to desirable or undesirable behaviors or courses of action, not statements of fact.
6. Scales should be tried out on a population similar to the investigation sample and analysis of results conducted to eliminate items which do not discriminate between high and low scoring subjects and those which do not correlate with total test scores.

These six suggestions were utilized in constructing the items in the Likert scale used in this investigation.

Gardner (1975) cautions against attitude investigations with little discernible relationship between the experimental treatment and the scale used to measure its effects. The investigator considered using a Likert scale developed by Otto (1968) for assessing content area teachers' attitudes toward reading instruction but decided against its use because the items on Otto's scale do not reflect a diagnostic-prescriptive approach to teaching reading skills. As this is the approach stressed in the inservice program used as the experimental

treatment in this investigation, it seemed wise to follow Gardner's advice and develop an instrument with a clear relationship to the experimental treatment. Thus the items for the Likert scale described here were constructed on the basis of the diagnostic-prescriptive approach to reading instruction as further described in the next section.

Development and Description: Using Sherif and Sherif's suggestions, the investigator developed a pool of 35 statements though to reflect behaviors or courses of action content area teachers might exhibit with regard to reading instruction in their classrooms. Approximately one-half of these statements were worded positively (for example, "It is desirable that teachers.....") and one-half worded negatively (for example, "It is not desirable for teachers....."). Approximately one-half of the statements were thought to describe behaviors or courses of action characteristic of diagnosis of reading ability and the other items to describe prescriptive strategies for utilizing diagnoses.

The 35 statements were presented to two university professors who teach courses in reading instruction and to several content area teachers in an attempt to establish content validity. Based on the independent judgments of these professionals, the 24 statements which most rated as valid were selected for the preliminary instrument.

Two minor revisions were made before field-testing this instrument. First, the term "content area" was deleted from each item and instead placed in the directions with the explanation that the term teacher(s) in each item was to be interpreted as meaning a teacher in any of the content areas such as English, social studies, math, science, music,

health education, home economics, etc. Second, some rewording was necessary in order that an equal number of positive and negative items could be retained. This rewording did not affect the content of any statement since in the scoring of Likert items, negatively worded items are scored in a reverse manner so as to make all response values equivalent. The purpose of including such negatively worded statements is to minimize the effects of response set.

The 24 item scale so constructed was initially field-tested on a total of 67 teachers at two sites, representing as closely as practical the sample to be used in the investigation. All were content area teachers in secondary schools in central Pennsylvania, about half of them in a rural school and the other half in an urban school. Most of the teachers had no background experience or coursework in reading instruction, and their range of teaching experience was from one to twenty-five years.

Reliability and Validity: Table 1 presents the results obtained in the field testing of this instrument. Following Sherif and Sherif's suggested procedures for establishing reliability, the test scores were analyzed on two dimensions. First, the coefficient alpha reliability formula was used as a measure for establishing internal consistency. On the original 24 item scale, this reliability estimate is .85. Second, items with the lowest adjusted item-total correlations were deleted and revised reliability coefficients were computed based on the remaining items. It was ultimately decided that the four items with adjusted item-total correlations below .35 could be deleted with little effect on reliability. Appendix A lists the 20 items retained on the final instrument. This final version has an estimated reliability of .84.

TABLE 1

RELIABILITY ESTIMATES FOR STATEMENTS SURVEY

	N	Possible Range of Scores	Actual Range of Scores	M	SD	Coefficient Alpha
Urban Teachers	34	24-120	65-114	97.00	11.12	.78
Rural Teachers	33	24-120	53-120	98.82	15.90	.88
Total	67	24-120	53-120	97.90	13.71	.85

NOTE. These figures are based on the original 24-item scale.

A second reliability study to estimate stability across time was conducted using a group of 32 graduate students enrolled in courses in Curriculum and Instruction and Educational Administration at the Pennsylvania State University. A Pearson product moment correlation between two test administrations was computed. The twenty item version of the Statements Survey has a test retest reliability of .57 with a two week interval.

It is of interest to note that while the use of the diagnostic-prescriptive format was useful for conceptualizing item construction and does take into account Gardner's admonition to relate the attitude scale to the experimental treatment, such as approach to test construction in this case did not yield, as originally hoped, two distinct subscales. The correlation between the items considered diagnostic and those considered prescriptive by the investigator and content judges is .77. As these two sets of items are so highly correlated, it was decided to use only a total score in analyzing the data in the study.

Content validity has been considered under test development. Another field testing was conducted in order to establish evidence for construct validity for the Likert scale attitude survey. The instrument was administered to 32 graduate students enrolled in an advanced practicum in developmental and remedial reading at The Pennsylvania State University. All were candidates for advanced degrees in reading; all reported teaching experience ranging from one to eleven years and completion of a minimum of six graduage credits in reading. The majority of this group in fact reported 12 or more advanced degree credits in reading courses. It was felt that such a

group differed substantially from the teachers who had completed the instrument as part of the previous field testing program. It was hypothesized that the graduate students would score significantly higher on the instrument if in fact the statements represented behaviors or courses of action toward which persons trained in reading instruction would express very positive attitudes. Table 2 presents the results of this test administration compared to the previous administration described. A statistically significant mean score difference between the groups is presented as evidence of construct validity for the instrument, t (9.7) = 5.637, $p < .001$.

Situations Survey: Teaching Reading In Content Areas

Purpose: As explained in the discussion of the development of the attitude survey, it was decided to use both a Likert scale and a semantic differential scale for measuring the attitudes of experimental and comparison group teachers in the investigation. It was hoped that the use of two different measures would increase the validity of the results obtained and would perhaps contribute evidence of the desirability of this approach to attitude assessment.

Background Information: Sherif and Sherif (1969) point out that most situations arouse not one but a complex of attitudes, one of which is the respondent's views of the person asking the question or administering the procedures in a research situation. Therefore, they caution, "adequate assessment of attitude cannot be made if one ignores the stimulus situation in which the individual's attitude is aroused" (page 336). It is from this cautionary stance that the question of

TABLE 2

STATEMENTS SURVEY:
MEAN SCORES OF SUBJECTS WITH DIFFERING BACKGROUNDS IN READING INSTRUCTION

	N	Possible Range of Scores	Actual Range of Scores	M	SD
Field Teachers	67	20-100	44-100	81.7	12.28
Graduate Students	32	20-120	65-100	93.3	7.83

NOTE. These figures are based on the revised 20-item scale.

direct versus indirect assessment of attitude evolves. Askov (1970) has suggested that based on the findings of Weschler and Bernberg (1950) the value of any technique used to assess attitude may rest primarily on the way in which its intent is disguised. Weschler and Bernberg seem to suggest that the use of techniques such as direct questioning (for example, "What do you think of.....?") and traditional scales of the Likert type may lead respondents to evade the issue and answer according to what they consider the socially desirable answer. Askov therefore suggests the use of an adaptation of Osgood's technique as a somewhat disguised or indirect method of attitude assessment. Sherif and Sherif (1969) and Shaw and Wright (1967) do not conceptualize the semantic differential technique as an indirect measure but suggest that its advantage over a rating scale technique such as that of Likert lies in its yielding "finer gradations" of the respondents' attitudes.

Snider and Osgood (1969) have compiled a volume which includes approximately 50 frequently cited research studies which have utilized the semantic differential technique. They point out that since Osgood's introduction of the technique in 1957, as an outgrowth of his work on meaning, the semantic differential has become one of the most consistently used measurement techniques in psychology. They suggest that this has occurred for two reasons. First, the semantic differential was designed to get at a very important variable in human behavior: meaning. Second, the technique is very flexible.

A review of a great number of studies in which the semantic differential technique is used suggests that relatively few studies have dealt with assessment of teacher attitude. Askov's 1970 study

in which change in elementary teachers' attitudes toward individualizing reading instruction has been cited previously. In this study a semantic differential instrument was used. Butzow and Davis (1975) report the use of a semantic differential scale for measuring teachers' attitudes toward teaching elementary science.

Nunnally (1967) makes five suggestions the test constructor should keep in mind in developing a scale using the semantic differential technique:

1. One should seek a homogeneous group of adjective scales that meets the requirements of reliability.
2. Numbers should be assigned to designate the gradations on the scales and the meanings of those numbers should be defined and illustrated for the respondents (for example, on the scale "good-bad," a 5 means "slightly good," a 4 means "slightly bad," etc.)
3. Rather than using the standard factors (i.e., adjective pairs) found in studies measuring diverse concepts, there is nothing wrong with developing particular groups of scales for particular purposes.
4. There is an advantage in summing over a number of scales, rather than in relying on one scale alone for a concept in that, despite the likelihood of having different patterns of loading factors, such a summation will permit finer discriminations among persons.
5. It is wise to compare concepts on individual scales in order to determine whether or not a particular scale provides useful information about each concept; in other

words, each concept should be considered individually with each scale in test construction (pp. 542-543).

The investigator used these guidelines in developing the semantic differential instrument described in the next section.

Development and Description: Although often referred to as the semantic differential, Osgood's technique is not a test but a very flexible way of getting at the meaning that a concept has for a person. Osgood, Succi and Tannebaum (1957) stress that there are no standardized concepts or standardized scales associated with the technique. Instead, the concepts and scales used for a particular instrument are determined by the purpose of the investigation.

A semantic differential instrument consists of a set of concepts ranging from single words (for example, "God," "honesty," etc.) to a description of a behavior or a course of action one might follow. After each concept is a series of bipolar adjectives (for example, "good-bad," "fair-unfair," etc.) which the respondent is to rate, usually on a seven point scale, the mid-point of which represents a neutral attitude while the extreme points represent gradients of intensity from, for example, "very good" to "slightly good" to "not very good" and, at the other end of the scale, from "very bad" to "slightly bad" to "not very bad."

When the respondent has rated a concept on such a series of bipolar adjectives, his attitude is inferred on the basis of both the direction and the polarity of his responses. A total score is either the total or the average of his ratings. Sherif and Sherif (1969) suggest that analysis of a score on a semantic differential instrument is based on the assumption that the more extreme a person's rating, the more intensely he holds an attitude in the indicated direction.

In developing the semantic differential instrument the investigator constructed a pool of 30 items for possible inclusion in a preliminary instrument. The same professors of reading and content area teachers who assisted in validating the Likert scale items for the Statements Survey individually judged these 30 items and from these, 16 were selected on the basis of inter-rater agreement. Each item consists of a brief description of a classroom "situation" a particular content area teacher might be faced with and a possible "plan" which might be implemented in the situation. Each plan represents either a diagnostic strategy or a prescriptive strategy related to reading instruction in the content area specified. In addition to these 16 items, two items were constructed which are considered to be "poor plans" for content area teachers to utilize. These items were included to minimize response set.

A series of bipolar adjectives was selected based on descriptive terms often used in the literature on content area reading, individualized instruction in reading, and diagnostic-prescriptive teaching. The instructions used are similar to those used by Askov (1970) which in turn are similar to those suggested by Osgood (1957).

Two adaptations of the semantic differential scale were made in the present study. Analysis of the three factors suggested by Osgood, Succi, and Tannebaum (evaluation, potency, and activity) was not undertaken since a unitary factor of attitude seemed more appropriate to the study than analysis of separate factors. Askov (1970) reports a similar adaptation of the technique.

Another adaptation was the addition of two questions following each item on which the respondent was also to use bipolar adjectives, this

time to rate his answers to the questions. The first question, which is the same for each item, asks the respondent to rate the plan described in the item on the basis of its feasibility in the classroom. This question was included to account for Osgood's caution that the way one evaluates a concept does not necessarily reflect the way one behaves toward that concept. The investigator was interested in looking at how responses to this question correlated with responses to the series of adjectives immediately following each item. It was speculated that some teachers could have a very positive attitude toward the plan described in an item but would nonetheless rate the plan as not very feasible in the classroom.

The second question following each item asked the respondents to rate their "skill" in considering whether or not they could execute such a plan as the one described in the item. Of interest here is the consideration of how respondents' ratings on this question (from very skilled to not skilled at all) would correlate with their performance on the skills instrument to be described in the next section. It was speculated that as indicated in studies cited earlier, respondents might report themselves as more skilled than the skills instrument would indicate.

It should be noted that the two questions included in the survey were scored separately from the semantic differential Situations Survey Score and considered as two separate meausres, a Feasibility Score and a Perceived Skill Score. The Situations Survey scores and Feasibility Scores were used as two separate indications of subjects' attitudes toward the integration of reading instruction in the content area classroom while the Perceived Skill Scores were used as one

dimension of valuating ubjects' kill level as discussed in Chapter Four.

Before field testing had been completed on this preliminary instrument, a content area reading consultant, who was brought in to represent the reactions of secondary teachers, made several suggestions for revised item wording and suggested the inclusion of an additional adjective scale. It was decided to incorporate these ideas in a revised version of the instrument and to complete the field testing with this revised instrument. Nine of the 18 items were thus changed and the bipolar adjective scale "desirable-undesirable" was added for each item.

Reliability And Validity: The revised version of the instrument was field tested on a total of 35 inservice teachers. Again, as reported in the section on the Statenebts Survey, the presumed subscales (diagnostic and prescriptive) correlated so highly with each other that it was decided to use only a total score as the instrument was apparently not measuring two distinct concepts. On the basis of lowest adjusted item-total correlations (coefficients lower than .39), six items were deleted from the 18 item preliminary instrument, including the two items constructed as "poor plans" which did not work as planned. In addition, one set of adjectives (challenging-unchallenging) was deleted for each plan on the basis of item-total correlation values.

The final instrument, then, consists of 12 items with five sets of bipolar adjectives to be rated for each item. Using the coefficient alpha reliability formula, this 12 item instrument has an estimated reliability of .897. A coefficient alpha reliability coefficient of

.97 was obtained when each set of adjectives was considered as a separate scale, thus making this a 60 item instrument instead of a 12 item one. However, it is more realistic to conceptualize the instrument as consisting of 12 items as it is questionable that each set of adjectives can be considered to be measuring a separate concept. Appendix B lists the items on the final version of this instrument with the five sets of adjectives that appear for each item.

A group of 33 secondary education students enrolled in an undergraduate course in content area reading instruction at the Pennsylvania State University was used in a test retest reliability study for the Situations Survey. Their scores were used in computing a Pearson Product Moment correlation for this instrument. Pre and posttest scores were gathered with a one week interval and a test retest reliability estimate of .68 was obtained for the Situations Survey scores, a .61 for the Feasibility Scores part of the instrument, and a .92 for the Perceived Skills Scores part of the instrument.

Evidence for construct validity for this semantic differential instrument is based on the administration of the survey to the same group of graduate students in reading as described for the Statements Survey. Again, it was speculated that this group of students would score significantly higher that the group of teachers on whom the instrument had been previously field tested. Table 3 presents the data gathered in this construct validity study. A statistically significant mean score difference between the groups was obtained as speculated would occur, t (65) = 4.51, $f < .001$.

TABLE 3

SITUATIONS SURVEY

MEAN SCORES OF SUBJECTS WITH DIFFERING BACKGROUNDS IN READING INSTRUCTION

		Possible Range of scores	Actual Range of scores	M	SD
Public School Teachers	35	60-420	196-420	332.88	55.58
Graduate Students in Reading	32	60-420	250-417	383.38	34.48

NOTE. These figures are based on the responses to the retained 12 items only.

Skills Test

Purpose: Because one of the dependent variables to be considered in the investigation was change in the diagnostic-prescriptive skills levels of teachers participating in the workshop program, an instrument was needed for measuring such change.

Background Information: As noted in reviewing investigations aimed at helping content area teachers develop skills in reading instruction, few attempts have been made to measure the pre and post skills levels of teachers involved. No appropriate instrument was located which would serve the purpose of the present investigation.

Glaser (in Brown, 1976) makes an important distinction between norm-referenced and criterion-referenced tests:

> On a norm-referenced test, performance is interpreted by comparing a given individual's score to that of a relevant comparison group. Thus, interpretation involves a statement of the person's relative ranking within a norm group.

> Scores on criterion-referenced tests, in contrast, are interpreted in terms of specified performance standards. That is, an individual's performance on a test is compared, not to the performance of other people, but to some standard of proficiency or mastery of the material covered by the test. Usually, this standard is defined in terms of degree of mastery of the test material -- that is, in terms of the test content. Such scores are therefore content-referenced (p. 202).

Askov, Kamm, and Klumb (1977) have suggested that criterion-referenced assessment instruments are the more appropriate of the two types described for measuring teacher skill levels since the purpose is measurement of skill attainment rather than comparison with a normative group. One of the purposes of the intervention of this investigation is the development and/or improvement of teachers' skills in using diagnostic-prescriptive instructional techniques in the content areas. Brown (1976) has suggested that criterion-referenced scores are appropriate when what is to be measured is achievement. It therefore seems appropriate, based on Glaser's description and the suggestions of Askov and Brown, that a criterion-referenced instrument be utilized to measure the level of teachers' skills in diagnostic-prescriptive techniques prior to the intervention and the changes, if any, that occur in these skill levels following the intervention.

Brown (1976) specifies two steps that should be followed in developing a criterion-referenced instrument. First, the content and/or skills domain to be covered by the test must be specified. Second, a scale on which test performance can be reported must be generated. He cautions that specifying the domain covered by the test is not always as straightforward as some suggest. He suggests that the use of behavioral objectives is perhaps the best approach to this problem. In generating a scale on which test performance can be reported, Brown

suggests three alternatives: (1) mastery scores, (2) percentage correct standard scores. While each type of score presents its own problem of interpretation because of the difficulty of establishing evidence of validity, Brown suggests that the simplest approach to scoring a criterion-referenced test is to establish an arbitrary "mastery" level which is interpreted as meaning that this level is the minimal level of performance needed to proceed to the next level or concept. Brown points out that there is preliminary evidence, as presented by Bloom and others, that mastery level is generally in the range of 80% to 90% correct responses.

Development and Description: Brown's suggested steps and cautions for developing a criterion-referenced instrument were followed in the construction of the skills test described here.

The investigator worked with the project directors in order to reach consensus in specifying the skills domain to be covered by the test. It was decided that the most rational approach to item development was to use Brown's suggestion regarding behavioral objectives. Because the experimental treatment was to be a series of workshops in which the participants would be required to meet specified objectives, these objectives were used as the content of the items for the instrument. For each objective of the workshop sessions, two or three items were written which were thought to measure attainment of that objective. From a pool of approximately 30 items, 24 were selected for field testing on the basis of inter-rater agreement.

It was decided to use a mastery score of 80% for reporting test performance. As Brown (1976) points out, use of such a score means that we are only interested in whether subjects attain an arbitrarily

selected standard or not. In other words, subjects who score at the 80% level or above are not differentiated and likewise, there is no differentiation between the subjects who score at the 79% level and those who score, for example, at the 36% level. What we are interested in is how many attain what is established as mastery and how many do not. Of particular interest in the present investigation is whether or not the experimental treatment has any significant effect on the percentage attaining this mastery level before and after the workshop sessions.

Reliability and Validity: The 24 item skills instrument was administered at the beginning and end of the 1976 summer term session to 20 Pennsylvania State University graduate students in education with teaching experience ranging from zero to seven years in a wide variety of subject areas. These students were enrolled in a course emphasizing principles and methods in the teaching of reading. Some of the topics covered in this class were ones which the project workshops would include. Pre and post test scores of these twenty students were examined in order to judge the effectiveness of the 24 items in assessing changes produced by the course. A pass/fail pre to post test matrix was considered for each item in order to evaluate two aspects of what Popham (1975) describes as descriptive validity. First, it was desirable that a large number of subjects fail the item on the pretest in order to establish that there was room for improvement during the course of "treatment" (the reading course). Second, it was desirable that a reasonable number of these subjects pass the item on the post-test as an indication of improvement after receiving the "treatment." Table 4 presents sample matrices used for this two-dimensional analysis.

TABLE 4

SAMPLE CONTENT VALIDITY MATRICES FOR SKILLS TEST

Item 24

Pretest \ Posttest	Pass	Fail
Pass	8	0
Fail	12	0

Item 22

Pretest \ Posttest	Pass	Fail
Pass	4	6
Fail	0	10

NOTE. The figure in each cell represents the number of subjects out of the sample of 20 scoring in that cell.

On Item 24 of the preliminary instrument, for example, 12 subjects (or 60% of the sample of 20) failed the item on pretesting, indicating that there was room for improvement on the concept measured by that item. On the posttesting, the same number of subjects, 12 (or 60%), passed the item, indicating that perhaps the treatment had been beneficial and providing evidence of the validity of that item. On the basis of these considerations, 3 of the 24 items appeared to be ineffective in assessing change brought about by instruction or treatment. One of these items was eliminated and the other two were revised based on the suggestions of the reading instruction professors originally used in validating the instrument.

This instrument was also submitted to a content area reading consultant brought in to help in the planning of the workshops and in the validation of instruments to be used in the study. On the basis

of this consultant's suggestions, several revisions in wording of the retained items were made. One other change was made at the suggestion of this consultant, the addition of a fifth alternative answer choice, "I honestly don't know" for each item.

An attempt to assess reliability of items was made using the same pass/fail pre-posttest matrices as shown in Table 4 based on the suggestions of Hess (1973). For each item, the sum of the proportion of subjects passing the item on both pre and posttest and the proportion failing the item on both pre and posttest was considered to indicate the minimum reliability. To the extent that the treatment (the reading course) was successful, one would expect the "actual" reliability to exceed that value. The proportion of subjects passing pretest and failing posttest was considered to indicate the minimum unreliability. Assuming that the treatment did not have any true detrimental effect on the subjects' knowledge in this area, this minimum unreliability reflects a ceiling on the possible reliability estimate for that item. The matrix for Item 22 in Table 4 is an example of an item considered to have a low reliability based on this approach. While a total of ten subjects (or 50% of the sample) passed the item on pretesting, only four of these subjects (20%) also passed it on posttesting, while six of them (30%) failed the item they had passed ten weeks earlier. A consideration of the pass-fail/pre-posttest matrices for all 24 items on the preliminary instrument using this type of analysis also indicates the advisability of deleting or revising the same three items previously determined to be ineffective in considering validity. Thus a 23 item final instrument was decided upon and used in the study. This instrument is presented in Appendix C.

A test-retest reliability estimate was computed for this instrument using pre and post test scores gathered with a two week interval. Subjects for this reliability study were 17 students enrolled in a graduate curriculum course at the Pennsylvania State University. Based on the scores of these subjects, a Pearson product moment correlation of .80 was obtained.

Questionnaire

Purpose: In order to evaluate the effects of the experimental treatment, the inservice workshop program, it was necessary to devise a system for collecting certain demographic information from both the experimental and comparison group teachers. The investigator wished to obtain information on such independent variables as years of teaching experience, educational background, and content area taught in order to consider how these variables correlated with changes in skill and attitude, if such changes occurred. A questionnaire was developed for obtaining such information.

Background Information: Sax (1968) has suggested that there are two alternatives for obtaining demographic information from subjects in experimental research, the questionnaire and the interview. While the interview may be the most desirable means for obtaining highly reliable and valid information, it is often not practical especially where large numbers of subjects are involved. Sax notes that there are two advantages of the questionnaire which make its use defensible in experimental research which requires the collection of demographic information. First, the use of the questionnaire is more economical than use of the interview in terms of both time and money. Second, the use of the questionnaire can be more standardized and thus responses

considered more reliable. Sax cautions that such standardization is only achieved if certain criteria are met. For example, respondents must be presented with the same set of questions or items, and responses must be obtained under the same type of conditions. If both these conditions can be met, the questionnaire can be considered more appropriate for educational research than the interview.

Development and Description: The investigator selected the variables believed to be of value in considering the nature of any changes which might occur in attitudes and/or skills among the subjects in the investigation. Based on these variables a questionnaire was constructed which is presented in Appendix D.

Purdue Teacher Opinionaire (PTO)

Purpose: An instrument was needed to control for independent variables that might account for changes (or no changes) in attitudes and skills among the experimental and comparison teachers in the investigation.

Background Information: The few studies which have addressed the issue of teacher attitude change, behavior change, and/or skill change as related to an intervention strategy have made no attempt to consider independent variables which might have had an influence on the changes (or lack or changes). It was speculated that teacher morale might be such a variable in that teachers with a generally low morale might be less likely to have initially positive attitudes or to change their attitudes toward reading instruction. The Purdue Teacher Opinionaire, the PTO, (Bentley and Remple, 1973) was selected as an instrument to control for this variable of teaching morale.

Development and Description: The PTO was developed at Purdue University as a measure of teacher morale. The authors suggest that the level of morale is determined by the "extent to which an individual's needs are satisfied and the extent to which the individual perceives satisfaction as stemming from the total job situation. High morale is evident when there is interest in and enthusiasm for the job" (page 4).

The first form of the PTO was developed in 1961. The version used in this investigation is a 1970 revision which contains 100 items representing ten categories (e.g., "Teacher Rapport with Principal," "Teacher Status," "School Facilities and Services"). Each item is a statement about persons and/or things in the environment related to morale. The respondent is to make a judgement or express his or her feelings about each statement on a four point scale. Responses are weighted and quantified so that a total score is assigned to each respondent which is reported as an index of the person's morale.

Reliability and Validity: The original instrument was administered experimentally to a sample of high school teachers. Based on internal consistency item analysis techniques, a final choice of items was made. This 1961 version consisting of 145 items in eight categories is reported to have a Kuder-Richardson estimated reliability of .96. It was validated through a procedure in which responding teachers were asked to name several teachers on their faculties whom they considered to have the "highest morale" and several they considered to have the "lowest morale." On the basis of these peer judgements, "high," "middle," and "low" teacher morale groups were identified and mean PTO scores were calculated for each group. Bentley and Remple (1961) report that differences among the three groups were in the expected

direction and statistically significant, providing evidence of construct validity for the instrument.

Factor analysis of the 1961 version of the PTO was undertaken to determine whether or not, as posited by Bentley and Remple, teacher morale is in fact multi-dimensional. Their investigation of this question resulted in the identification of ten factors and on the basis of the factor analysis study, the PTO was revised in the current form which contains 100 items in ten categories. The PTO is available from the Purdue Research Foundation, West Lafeyette, Indiana.

Bentley and Remple (1973) report a test-retest (four week interval) correlation for total scores on the revised edition of .87. In another validation study, this time using the revised edition, principals were asked to respond to the items as they thought faculty members would respond. Further evidence for the validity of the PTO was established in that differences between the median scores for faculty members and those for the principals were not significant.

One recent addition to the technical data available to users of the PTO is expansion of the norming groups reported. Of particular interest for this investigation is the inclusion of separate norming information for junior and senior high school facilities.

Selection of the Sample

In selecting the sample to be used in this investigation, the project directors recognized the desirability of including a diversified group of teachers in order that results of the investigation might be generalized to a variety of other populations. For this reason, the grant proposal included a committment to provide inservice training in

school systems representing three different geographical areas, one urban, one rural, and one suburban. A number of sites were considered and rejected on the basis of state definitions of urban, rural and suburban. The New Middle School in Harrisburg, Pennsylvania, was selected as the urban site; the Penns Valley Junior High School, in Spring Mills, Pennsylvania, was selected as the rural site; and the Park Forest and Westerly Parkway Junior High Schools in State College, Pennsylvania, were combined as the suburban site. Adult Basic Education teachers in Harrisburg were invited to participate as part of the urban sample and Adult Basic Education teacher in State College and surrounding areas were invited to participate as part of either the suburban or rural sample.

The project directors met with the principals and other administrative personnel at each site to describe the project to be undertaken during the school year 1976-77. Meetings with the faculty and staff were also arranged so that direct discussion with the project directors could be held. All faculty members and staff at each site were accorded an opportunity to volunteer for participation in the project. Graduate credit (up to six credit hours) was arranged at the teacher's option through The Pennsylvania State University, Department of Continuing Education. In addition, a modest honorarium per workshop was offered. Staff and administrative personnel who indicated a desire to participate were encouraged to do so in addition to the regular faculty members who were the target group for the project. These other participants (non-faculty members) would be eligible for credit but not for the honorarium under terms of the grant funding the project. These stipulations were based both on The Pennsylvania Department of Education guidelines and the

suggestions made by Otto and Erikson (1973) and Axelrod (1975) for maximizing the value of inservice education.

Because randomization of sample is not feasible in a situation such as the one just described where "volunteers" are recruited and all who volunteer are accepted, it was not possible to establish true control groups. As it was nonetheless desirable in the design of the study to make some provision for comparing results according to differing groups, Stanley and Campbell's (1963) suggestion for non-equivalent control or comparison groups was followed. Principals at the selected sites were requested to approve and arrange the scheduling of pre and posttesting sessions for their total faculties so that all personnel who were to participate in the workshops plus those not electing to participate would be included in the data gathering process. It was explained that an attempt would be made to keep the identities of individual persons anonymous through the use of numeric aliases which only the investigator could match with a subject's name. This identification was deemed necessary in that not only pre and posttest scores would be matched in the analysis of data but also demographic data gathered at the pretest session, information from intervening observations of instruction, and evaluations of materials developed by workshop participants. According to terms of a protocal prepared for and approved by The Pennsylvania State University Committee for the Protection of Human Subjects, an informed consent form was to be filled out by each participant in the workshops as well as those comprising the comparison groups. Comparison teachers were paid a small honorarium for their cooperation in the data collection process.

Treatment

The experimental treatment consisted of two types of intervention. First, a series of fifteen inservice workshops was planned for the school year 1976-77, each of which would focus on one or more aspects of a diagnostic-prescriptive model for dealing with reading instruction within the content area classroom. The second type of intervention consisted of providing each site with one or more graduate assistants trained in reading who would provide on site consultant services and would observe the extent to which the techniques described in the workshops were implemented in the classroom.

Inservice Workshop Program

The selection of topics for the inservice workshops was based on these three considerations: (1) the recommendations of Otto and Erikson (1973) and those of Axelrod (1975) for successful inservice in reading; (2) the reports of the content of several of the inservice programs described in Chapter Two; and (3) the experience of one of the project directors with a course offered in resident instruction at The Pennsylvania State University (Fall, 1975) which was considered a pilot of the content of the project workshops. The workshop topics are included in Table 5.

Teachers participating in the workshop program had three options. They could register for six graduate credits through Continuing Education at The Pennsylvania State University, register for three credits, or they could simply attend the workshops, not registering for any graduate credits. Those registering for credit paid the standard Pennsylvania State University tuition fee.

Workshop participants registered for six credits were expected to complete all of the 13 objectives outlined in Table 5. Those registered for three credits were expected to complete the first 12 of these objectives. Final grading for those registered for credit depended upon the satisfactory completion of the required objectives as judged by the on site consultants.

It was hoped that those teachers participating in the workshops but not registered for graduate credit would also complete most of the objectives. As an incentive, these teachers would receive a certificate indicating that they had successfully completed a course in content area reading if they satisfactorily completed objectives one through nine plus objectives eleven and twelve. Those non credit workshop participants completing fewer than these objectives would not receive the certificate.

On Site Consultants

Four Pennsylvania State University graduate assistants served as on site consultants. These assistants were selected on the basis of their experience in secondary education and their background in reading. The assistants attended orientation sessions prior to the first workshops during which they were introduced to the concepts to be covered in the workshops and given suggestions for working with content area teachers. During one of these orientation sessions, a consultant with experience in training content area reading teachers in various inservice programs shared her experiences with the staff of the project and offered suggestions as to how the on site consultants might be of the most benefit to the workshop participants. During subsequent orientation sessions, another consultant helped the

TABLE 5

WORKSHOP OBJECTIVES AND CORRESPONDING WORKSHOP TOPICS

Workshop Objective	Workshop Topic
#1 - Each teacher will demonstrate understanding of informal diagnosis by creating two informal diagnostic procedures.	Informal and formal diagnosis of reading ability.
#2 - Each teacher will use the results of diagnostic procedures to develop grouping patterns or other classroom management plans.	Informal and formal diagnosis of reading ability.
#3 - Each teacher will develop three alternative instructional procedures, a unit, a learning activity packet, and a lesson or longer instructional plan using a medium other than reading.	Strategies for instructional organization.
#4 - As part of a content area group (or individually), each teacher will develop an annotated bibliography of teaching materials in his/her content area.	Selecting appropriate materials.
#5 - Each teacher will demonstrate understanding of linguistically and culturally different students by outlining the major language problems faced by black and Appalachian students and describing in essay form one dialect or linguistic problem with three ways to work with it in the classroom.	Language development and differences related to the reading process.
#6 - Each teacher will develop five exercises to reach reading skills in his/her content area, at least one of which will emphasize a skill in each major skill area of vocabulary, comprehension and study skills.	Vocabulary development, teaching study skills, and levels of cognition.

TABLE 5 (cont'd)

Workshop Objective	Workshop Topic
#7 - Each teacher will demonstrate his/her ability to write comprehension questions at differing levels by writing at least six questions on one piece of reading, using at least two levels of questioning.	Levels of questioning for reading comprehension.
#8 - Each teacher will identify paragraph functions for each paragraph in a piece of reading in his/her content area.	Critical reading.
#9 - Each teacher will demonstrate understanding of the concept of readability by applying at least two readability formulas to three texts in his/her content area and by writing a critical evaluation of the effectiveness of readability measures in his/her content area.	Readability of content area materials.
#10 - Each teacher will develop a case study which follows one or more students over the length of the workshops and includes use of diagnosis and some prescriptive intervention based on that diagnosis.	Informal and formal diagnosis of reading ability.
#11 - Each teacher will demonstrate his/her ability to apply content area reading principles by teaching at least three lessons including content area reading skills, observed by a project staff member and discussed in a follow-up session.	Utilizing directed reading activities in the content areas.

TABLE 5 (cont'd)

Workshop Objective	Workshop Topic
#12 - Each teacher will keep a weekly logbook of activities and lessons involving content area reading in at least one class. #13 - Each teacher will present to his/her workshop class a report or demonstration of one of his/her teaching experiences using a content area reading practice discussed in the workshops.	Utilizing directed reading activities in the content areas.

staff develop a systematic observation form to use when workshop teachers requested that the consultants visit their classroom for demonstration of various competencies. Training sessions in the use of this observation form were held as well as sessions during which the staff practiced judging the effectiveness of techniques they might observe workshop participants utilizing in their classrooms.

Once the project was underway, each assistant was required to attend the workshop sessions held at the site to which he or she was assigned. In addition, these assistants were required to spend at least one day each week in the schools observing in the classrooms of workshop participants and meeting with these teachers to help them prepare materials and/or plan lessons utilizing the techniques stressed in the workshops. Throughout the year the assistants met on a regular basis with the project directors in order to share ideas and to insure equal treatment procedures across sites.

Evaluation Procedures

A total of seven sets of data were collected during the course of study. A description of the procedures followed for collecting each set of data follows. Table 6 presents this information graphically.

Questionnaire

Demographic information was collected from all experimental teachers participating in the workshops and from those not participating who were considered to be the comparison group at each site. The questionnaire was filled out as part of the pretesting session at each site.

Table 6

DATA COLLECTION PATTERN

Type of Data	Experimental Teachers	Comparison Teachers
Questionnaire	X	X
Statements Survey	X	X
Situations Survey	X	X
Purdue Teacher Opinionaire	X	X
Skills Test	X	
Teacher Logs	X	
Classroom Observations	X	

Note. An X indicates that data was collected from the part of the sample listed in that column.

Statements Survey

The Statements Survey was administered to all experimental and all comparison teachers at each site. This survey was administered as part of the pretesting session and again at a posttesting session following the final workshop at the end of the project year.

Situations Survey

The Situations Survey was administered to all experimental and all comparison subjects at each site at both the pre and posttesting sessions.

Purdue Teacher Opinionaire

The Purdue Teacher Opinionaire described in Chapter Two was administered to all experimental and comparison group teachers at all sites as part of the pretesting session. This instrument was also administered as part of the posttesting session at the end of the year.

Skills Test

The skills test described in Chapter Two was administered only to the teachers participating in the workshops. The test was administered during the first workshop session as a pretest and at the final workshop as a posttest.

Teacher Logs

Each teacher participating in the workshops was required to keep an informal log book in which was to be recorded any opportunity for

utilizing the techniques stressed in the sessions. Description of actual uses of such techniques were to be included as well as evaluations of the outcomes of such occurrences. Teachers were also to note the use of any materials suggested by the project directors in the workshops with an indication of the effectiveness of such materials. Finally, teachers were to note the nature of any help they received from the on site consultants. These log books were to be used as self report data to provide additional information which might help explain the effects of the treatment.

Classroom Observations

The on site consultants were required to make regular visits to the classrooms of the teachers assigned to them. These visits were to be made on the basis of mutual agreement between the consultant and the teacher so that feelings of pressure to perform were minimized as suggested by Otto and Erikson (1973) and also by Axelrod (1975). Teachers were encouraged to invite the consultants to visit their classrooms, for example, whenever they planned to "try out" one of the techniques suggested in the workshops. Follow-up meetings between the teachers and the consultants were to be scheduled so that feedback could be provided. The consultants were required to fill out an observation and consultation report for each of these scheduled meetings. The consultants also were required to assign to each participating teacher a pre or entry skill rating and a post or exit skill rating based on these classroom observations. Observation reports and skill ratings were used as a means of getting an idea of how much effect the workshop sessions had on teacher behavior in the classroom.

The methods for analyzing the data gathered by the instruments described are presented with results in Chapter Four.

Limitations Of The Study

While it is desirable to use control groups as described by Stanley and Campbell (1963) and Isaac and Michael (1974), this is frequently a difficult if not impossible technique to utilize on educational research. Campbell and Stanley (1963) suggest that in place of the Pretest Posttest Control Group Design in which subjects are assigned randomly to experimental and control groups from a common population, it is quite legitimate to utilize what they label the Non-equivalent Control Group Design in situations for "naturally assembled collectives" such as classrooms or school faculties where randomization of sample is not generally feasible. Such a design, while not as ideal as the Control Group Design, is preferable to using a One-Group Pretest Posttest Design. For this reason comparison or non-equivalent control groups, consisting of faculty members at the project sites who chose not to participate in the workshop part of the project, are utilized in this study on the assumption that they are as similar to the participating teachers (the experimental subjects) as availability permits.

A second limitation of the present study is the matter of dealing with student achievement. The ultimate aim of helping teachers develop skills necessary to incorporating reading instruction in the content areas is of course increased academic achievement among the students taught by these teachers. Consideration was given to pre and post testing the student population served by the experimental and comparison

group teachers in the study, particularly in the area of reading. However the project directors and staff concluded that expectation of significant gain in any sort of academic achievement which could be attributed to teacher participation in the inservice program was unrealistic. Singer (1972), who discusses this issue of student gain during an inservice program, suggests that a one year "treatment" is not a long enough period of time for significant student gain to occur. Therefore, it was decided to focus on teacher changes in attitude and skill and to recommend a follow-up study to examine the effects, if any, on student achievement during the year following the inservice program.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE FINDINGS

Findings based on the data gathered as part of this investigation are presented under the following general headings: (1) characteristics of the junior high school teachers, (2) attitudes among the junior high school teachers, (3) morale levels among the junior high school teachers, (4) skill levels among the junior high school teachers, and (5) characteristics, attitudes, morale levels, and skill levels among the teachers of adults.

Characteristics of the Junior High School Teachers

Differences Between Treatment Groups

Based on the responses of 129 junior high school teachers (57 experimental teachers and 72 comparison teachers) to the questionnaire described in Chapter Three, several factors emerge which provide a description of the population used in this investigation. In general, the teachers who comprised the experimental group did not differ significantly from the teachers in the comparison group on the factors covered by the questionnaire. Using chi square for comparison of demographic data, on only three factors was a significant difference found between the two groups. Table 7 presents the frequencies and percentages of total group responses for these three factors. On the first factor for which a significant difference was found, the experimental group reported significantly less teaching experience, both in terms of reported total years of teaching, $\chi^2(3) = 19.74$, $p < .001$, years teaching in their particular content area, $\chi^2(3) = 24.65$, $p < .001$, than did the comparison group. On the second factor for which a

Table 7

Demographic Factors on Which Junior High Teacher Treatment Groups Differed Significantly

	Total Experimental Group n = 57		Total Comparison Group n = 72	
	f	%	f	%
Factor One: Teaching Experience				
Years experience in primary content area ($p < .001$)				
0 - 3 years	22	38.6	18	25.4
4 - 7 years	25	43.9	15	21.1
8 - 11 years	7	12.3	7	9.9
12 - 15 years	1	1.8	7	9.9
more than 15 years	2	3.5	24	33.8
Total years teaching experience ($p < .001$)				
0 - 3 years	18	31.6	12	16.7
4 - 7 years	26	45.6	17	23.6
8 - 11 years	5	8.8	7	9.7
12 - 15 years	2	3.5	7	9.7
more than 15 years	6	10.5	29	40.3
Factor Two: Level of Education ($p < .05$)				
high school graduate	0	0	0	0
some college	0	0	2	2.8
undergraduate degree	39	68.4	31	43.1
master's degree	18	31.6	36	50.0
doctorate	0	0	3	4.2
Factor Three: Content Area(s) Taught ($p < .05$)				
science	12	21.1	4	5.6

significant difference was found, the comparison group also reported a significantly higher level of education than the experimental group, $\chi^2(1) = 5.70$, $p < .05$. The third factor on which the groups differed significantly was that of content area. A significantly greater percentage of experimental teachers reported that they taught science than did comparison teachers, $\chi^2(1) = 5.53$, $p < .05$. It should be noted that the degrees of freedom reported do not match the numbers in the categories in Table 7 because categories were combined in several cases due to small cell frequencies. For all other content areas, percentages for the experimental and comparison groups did not differ significantly. Table 8 provides a detailed analysis of the makeup of both treatment groups with regard to content areas represented within each group. For example, a larger percentage of teachers in the experimental group (26.3%) reported that they taught English than in the comparison group (15.3%). Looking at what are traditionally considered the "major" content areas in secondary schools (English, social studies, sciences, and math), it should be noted that substantially large percentages of teachers in both groups reported teaching in these areas. The next largest category for both groups is reading. As noted on the table, these categories are non exclusive; in other words, a teacher could report teaching in more than one content area.

On the other factors covered by the questionnaire, no significant differences were found between the treatment groups. In general, then, the treatment groups differed very little with regard to the kinds of demographic data gathered for this investigation. When the demographic data were analyzed by site (urban, suburban, rural), treatment group differences on the teaching experience factor held only for the

Table 8

Content Area(s) Represented by Junior High Teachers in Experimental and Comparison Groups

	Experimental Group		Comparison Group	
	f	%	f	%
Content Area:				
English	15	26.3	11	15.3
Social Studies	10	17.5	14	19.4
Science	12	21.1	4	5.6
Math	8	14.0	14	19.4
Health Education	2	3.5	3	4.2
Home Economics	6	10.5	1	1.4
Vocational Education	7	12.3	7	9.7
Business Education	2	3.5	5	6.9
Special Education	3	5.3	5	6.9
Consumer Education	10	11.5	7	9.7
Reading	11	19.3	9	12.5
Music	2	3.5	6	8.3
Art	3	5.3	1	1.4
Foreign Language	4	7.0	4	5.6
Bilingual Education	2	3.5	2	2.8
Librarian	2	3.5	4	5.6
Non Teaching Personnel	2	3.5	8	11.1

Note. Content area categories are non exclusive in that many teachers reported teaching in more than one category.

suburban, $\chi^2(2) = 7.31$, $p < .05$, (for total years of teaching experience) and $\chi^2(2) = 8.74$, $p < .05$ (for years teaching in a particular content area), and rural, $\chi^2(2) = 7.31$, $p < .05$ (for total years teaching experience) and $\chi^2(2) = 12.44$, $p < .01$ (for years teaching in a particular content area), samples. For the second factor (level of education) and the third factor (content areas taught), significant differences between treatment groups were not found at individual sites.

Experimental Group Characteristics

Table 9 presents comparative data on experimental teachers only on the variables of graduate credit, completion of workshop objectives, and workshop attendance. Figures are presented for the total experimental group and for each of the three geographical sites separately. Teachers were considered experimental only if they attended at least ten of the fifteen workshop sessions. Any teacher for whom pretest and posttest data were available who attended less than three of the workshops was considered a comparison teacher as well as teachers who attended none of the workshops but agreed to complete the pre and posttest instruments.

Table 9 indicates that 35 of the 58 experimental teachers, or 60%, elected to attend the workshop sessions and earn either three or six graduate credits. At the urban site, 86% of the teachers elected one of the credit options while at the suburban and rural sites, 30% and 65% respectively chose to attend and earn credit.

Teachers electing to attend the fifteen workshops for graduate credit plus teachers desiring to earn a certificate of completion were expected to complete the first nine objectives specified in Table 5 in Chapter Three. These nine objectives represented what were considered skill level objectives. Table 9 indicates that 32 of the

Table 9

Comparisons Among Experimental Junior High Teachers on Variables of Graduate Credit, Completion of Workshop Objectives, and Workshop Attendance

	Teachers Selecting 6 Credit Option	Teachers Selecting 3 Credit Option	Total Teachers Selecting Credit Option	Teachers Selecting Non Credit Option	Credit (3-6) Teachers Completing Skill Level Objectives	Non Credit Teachers Completing Skill Level Objectives	Credit (3-6) Teachers Completing Application Level Obj.	Non Credit (3-6) Teachers Completing Application Level Obj.	Credit Teachers Completing All Required Objectives	Non Credit Teachers Earning Certificate of Completion	Mean Number of Workshop Objectives Completed of Possible 13	Mean Number Workshops Attended of Possible 15
All Sites Combined (n = 58)	31	4	35	23	32	3	33	6	31	3	9.48	13.51
Urban Site Only (n = 21)	17	1	18	3	15	1	17	2	15	1	11.86	13
Suburban Site Only (n = 20)	5	1	6	14	6	2	5	4	6	2	7.10	13.35
Rural Site Only (n = 17)	9	2	11	6	11	0	11	0	11	0	9.47	14.18

35 experimental teachers electing one of the credit options, or 91%, completed all of these skill level objectives. Analysis by site indicates that 83% urban, 100% suburban, and 100% rural teachers electing a credit option completed the nine skills objectives. Of those teachers electing to attend the workshop sessions for no graduate credit, 3 of 23, or 13%, completed the skills objectives. Analysis by site indicates that 33% urban, 14% suburban, and 0% rural non credit teachers completed these objectives.

Teachers electing to attend the workshops for credit as well as those attending in order to earn a certificate of completion were expected to complete objectives 11 and 12 described in Table 5 in Chapter Three. These two objectives were considered classroom application level objectives. Of the teachers electing graduate credit, 33 of 35, or 94%, completed these objectives. By site, 94% urban, 83% suburban, and 100% rural teachers completed these classroom application objectives. Of those teachers electing neither credit option, 6 of 23, or 26%, completed these objectives. By site, 66% urban, 29% suburban, and 0% rural teachers completed these classroom application objectives.

Teachers electing the credit options were additionally required to complete objective 10 (see Table 5 in Chapter Three) for 3 credits and objectives 10 and 13 (see Table 5 in Chapter Three) for 6 credits. Successful completion of all required objectives by these teachers meant a B grade on the graduate transcript, an A grade assigned if the on site consultants rated at least three of the objectives submitted as outstanding rather than satisfactory. (Successful completion of less than the required objectives resulted in the lowering of a teacher's

grade by one grade per each unsatisfactory or unsubmitted objective.) Of the 35 experimental teachers electing one of the credit options, 31, or 89%, successfully completed the required number of objectives, 83% at the urban site, 100% at the suburban site, and 100% at the rural site doing so.

Teachers attending the workshops and wishing only to earn a certificate of completion (non credit teachers) were expected to complete all nine skill level objectives and the two classroom application objectives. Of the 23 non credit teachers, 3, or 13%, earned this certificate.

Table 9 also indicates the mean number of workshop objectives (of a possible total of thirteen) completed by teachers at all sites (9.48) and for each site separately (11.86 at the urban site, 7.10 at the suburban site, and 9.47 at the rural site).

Finally, Table 9 indicates the mean number of workshops (of a possible total of fifteen) attended by teachers at all sites (13.51) and for each site separately (13 at the urban site, 13.35 at the suburban site, and 14.18 at the rural site).

Attitudes Among Junior High School Teachers

Hypothesis number one in Chapter One states that within each site, the positive relationship between group membership (experimental or comparison) and posttest performance on attitude measures will be significantly greater than the positive relationship between group membership and pretest performance on these measures.

Analysis of Attitude Change

Hypothesis number one was accpeted. The experimental teachers' gains on the three attitude measures were significantly greater than

the gains of the comparison teachers. Thus, on each of the three attitude measures, the relationship between group membership and performance on the posttests was greater than that relationship on the pretests.

Table 10 presents the observed or actual mean scores on the three attitude measures for all sites combined, for the urban site only, for the suburban site only, and for the rural site only.

Analysis of variance using the RUMMAGE computer program at The Pennsylvania State University was used for a three way analysis of variance. A sites x treatment x time analysis was conducted on each of the three attitude measures. Tables 11, 12, and 13 present the summary data for these analyses.

On all three attitude measures no significant treatment main effect or site x treatment interaction effect was found. The fact that a significant treatment main effect was not found supports the assumption that the experimental and comparison groups were equivalent at the beginning of the treatment period despite the fact that teachers were not randomly selected for the treatment groups. The absence of a significant site x treatment interaction effect further supports groups' equivalency and establishes that the groups did not differ significantly at any of the three sites at the beginning of the treatment period.

A significant time main effect was found with posttest scores for the total sample (teachers in both treatment groups at all sites) higher than pretest scores ($p < .05$ on Statements Survey and $p < .001$ on Situations Survey and Feasibility scores). However, there was also a significant time x treatment interaction. Examination of cell means

Table 10

Pre and Posttest Observed Mean Scores of Junior High Teachers on Attitudes Measures

Treatment Groups Combined:	All Sites Combined		Urban Site Only		Suburban Site Only		Rural Site Only	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Statements Survey Scores	85.40 (n=129)	87.28 (n=129)	83.78 (n=41)	86.29 (n=41)	88.29 (n=49)	88.59 (n=49)	83.49 (n=39)	86.67 (n=39)
Situations Survey Scores	348.17 (n=129)	366.68 (n=130)	349.76 (n=42)	358.50 (n=48)	354.69 (n=48)	373.69 (n=49)	338.44 (n=39)	366.77 (n=39)
Feasibility Scores	65.10 (n=129)	71.30 (n=130)	63.57 (n=42)	69.36 (n=42)	67.25 (n=48)	72.71 (n=49)	64.10 (n=39)	71.62 (n=39)
Experimental Groups Only:								
Statements Survey Scores	86.06 (n=58)	90.78 (n=58)	84.62 (n=21)	91.81 (n=21)	88.90 (n=20)	92.05 (n=20)	84.53 (n=17	88.00 (n=17)
Situations Survey Scores	346.96 (n=57)	374.90 (n=57)	347.43 (n=21)	368.95 (n=21)	351.68 (n=19)	377.00 (n=19)	341.12 (n=17)	379.88 (n=17)
Feasibility Scores	63.63 (n=57)	73.14 (n=57)	62.24 (n=21)	72.10 (n=21)	66.0 (n=19)	74.05 (n=19)	62.71 (n=17)	73.29 (n=17)
Comparison Groups Only:								
Statements Survey Scores	84.86 (n=71)	84.10 (n=72)	82.90 (n=20)	79.57 (n=21)	87.86 (n=29)	86.21 (n=29)	82.68 (n=22)	85.64 (n=22)
Situations Survey Scores	349.13 (n=72)	360.25 (n=72)	352.10 (n=21)	347.86 (n=21)	356.66 (n=29)	371.97 (n=29)	336.36 (n=22)	356.64 (n=22)
Feasibility Scores	66.26 (n=72)	69.79 (n=72)	64.90 (n=21)	66.52 (n=21)	68.07 (n=29)	71.76 (n=29)	65.18 (n=22)	70.32 (n=22)

A.5-49

Table 11

Site x Treatment x Time Analysis of Variance
on Junior High Teachers' Statements Survey Scores

Source	df	MS	F	p
Sites	2	187.75	1.16	> .05
Treatment	1	560.33	3.47	> .05
Site x Treatment	2	100.08	< 1	> .05
Error (between Ss)	123	161.32		
Time	1	282.06	4.36	.04
Site x Time	2	34.25	< 1	> .05
Treatment x Time	1	388.22	6.01	.02
Site x Treatment x Time	2	102.26	1.58	> .05
Error (within Ss)	123	64.64		

Table 12

Site x Treatment x Time Analysis of Variance
on Junior High Teachers' Situations Survey Scores

Source	df	MS	F	p
Site	2	347.25	< 1	> .05
Treatment	1	9296.30	3.91	> .05
Site x Treatment	2	1050.60	< 1	> .05
Error (between Ss)	123	2379.90		
Time	1	23,858.00	25.38	< .001
Site x Time	2	2205.50	2.35	> .05
Treatment x Time	1	5135.70	5.46	.02
Site x Treatment x Time	2	341.90	< 1	> .05
Error (within Ss)	123	940.04		

Table 13

Site x Treatment x Time Analysis of Variance
on Junior High Teachers' Feasibility Scores

Source	df	MS	F	p
Site	2	20.08	< 1	> .05
Treatment	1	48.00	< 1	> .05
Site x Treatment	2	12.25	< 1	> .05
Error (between Ss)	123	117.14		
Time	1	2658.50	43.24	< .001
Site x Time	2	27.61	< 1	> .05
Treatment x Time	1	574.53	9.34	< .01
Site x Treatment x Time	2	22.70	< 1	> .05
Error (withing Ss)	123	61.49		

showed that, for each measure, either the comparison group did not improve significantly while the treatment group did (on Statements Survey and Situations Survey) or the comparison scores also increased but not so much as those of the experimental group (Feasibility scores). In other words, the gains made by the experimental groups were significantly greater than those by the comparison groups. The non significant site x treatment x time interaction indicates that the time x treatment effect held across all sites. In other words, there were no significant differences by site.

Table 14 presents the estimated mean scores (adjusted for unequal n's) on all three attitude measures only for those factors on which a significant effect was obtained. On all three attitude measures the posttest experimental group mean scores are the highest and are significantly higher than the other three mean scores cited.

Correlations Among Attitude Measures

Tables 15, 16, and 17 present the correlations among the pre and posttest scores on the three attitude measures for both treatment groups at all sites combined and for the three sites separately (Table 15) and for each treatment group with all sites combined and separately (Tables 16 and 17). Close examination of these tables provides information about how closely related teacher responses were between and among any of the attitudinal measures. Table 15, for example, indicates that the highest correlations for both treatment groups combined occurred between posttest Feasibility scores and posttest Situations Survey scores, ranging from .85 at the rural site to .88 at the suburban site. Feasibility scores and Situations Survey scores were also highly correlated at pretest, ranging from

Table 14

Estimated Mean Scores of Junior High Teachers on Three Attitude Measures

	Pretest			Posttest		
	Experimental Group	Comparison Group	All Teachers	Experimental Group	Comparison Group	All Teachers
Statements Survey Scores						
Time	--	--	86.00	--	--	88.12
Treatment x Time	88.30	83.71	--	92.90	83.34	--
Situations Survey Scores						
Time	--	--	347.53	--	--	367.02
Treatment x Time	353.19	341.87	--	381.73	352.32	--
Feasibility Scores						
Time	--	--	64.78	--	--	71.28
Treatment x Time	64.03	65.52	--	73.56	69.00	--

Table 15

Correlation Among Three Attitude Measures for
Junior High Teacher Treatment Groups Combined

	All Sites Combined		Urban Site Only		Suburban Site Only		Rural Site Only	
Pretest Scores:	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores
Statements Survey	.39**	.35**	.27	.31*	.38**	.36*	.49**	.37*
Situations Survey		.71**		.74**		.78**		.60**
Posttest Scores:								
Statements Survey	.23*	.15	.20	.10	.10	.06	.33*	.30
Situations Survey		.86**		.86**		.88**		.85**

Note. Because of incomplete data, n's range from 126 - 130 for all sites combined, 38 - 42 for the urban site, 48 - 49 for the suburban site, and 38 - 39 for the rural site.

*$p < .05$

**$p < .01$

Table 16

Correlations Among the Three Attitude Measures for Junior High Teacher Comparison Groups

	All Sites Combined		Urban Site Only		Suburban Site Only		Rural Site Only	
Pretest Scores:	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores
Statements Survey	.33**	.38**	.13	.31	.45*	.27	.39	.54**
Situations Survey		.72**		.68**		.82**		.72**
Posttest Scores:								
Statements Survey	.25*	.12	.07	.09	.15	.08	.61**	.51*
Situations Survey		.87**		.86**		.91**		.91**

Note. Because of incomplete data, n's range from 69 - 72 for all sites combined and from 19 - 21 for the urban site. For the suburban and rural sites, n's remain constant at 29 and 22 respectively.

*$p < .05$

**$p < .01$

A.5-55

Table 17

Correlations Among the Three Attitude Measures for Junior High Teacher Experimental Groups

	All Sites Combined		Urban Site Only		Suburban Site Only		Rural Site Only	
Pretest Scores:	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores	Situations Survey	Feasibility Scores
Statements Survey	.46**	.36**	.44*	.37	.30	.51*	.60*	.20
Situations Survey		.71**		.79**		.73**		.52*
Posttest Scores:								
Statements Survey	.02	.05	.33	.40	-.04	-.07	-.13	-.10
Situations Survey		.82**		.86**		.86**		.74**

Note. Because of incomplete data, n's range from 54 - 58 for all sites combined, 19 - 21 for the urban site, 17 - 21 for the suburban site, and 15 - 17 for the rural site.

*$p < .05$

** $p < .01$

.60 at the rural site to .78 at the suburban site. These high correlations are not surprising in that the two scores are obtained from the same instrument and both derive from the semantic differential technique for assessing attitudes. Similarly high positive correlations between these two sets of scores were found when only the scores of comparison group teachers were considered (Table 16) and when only experimental group teachers' scores were considered (Table 17). Asterisks are used in these tables to indicate where correlations are significant. For example, while a correlation of .31 between pretest Statements Survey scores and pretest Feasibility scores for both treatment groups combined at the urban site is significant ($p < .05$), this same correlation of .31 between pretest Statements Survey scores and pretest Feasibility scores for the urban comparison group only is not significant because of the smaller sample size on which the correlation is based. Table 18 presents pretest-posttest correlations for each of the three attitude measures.

Attitude Change and Credit Status

One additional analysis was conducted on the data generated by the three attitude measures. Because it appeared that the variable of credit status might account for whether or not teachers' attitudes changed over the experimental treatment period, a credit status x time analysis of variance was conducted in which the total experimental sample ($n = 58$) was divided into two groups, those who elected to participate in the inservice workshop program in order to earn graduate credit and those who elected to participate for no credit. Table 19 presents the means for each of these two groups (adjusted for unequal

Table 18

Pretest-Posttest Correlations for Junior High Teachers on Three Attitude Measures

	All Sites Combined	Urban Site Only	Suburban Site Only	Rural Site Only
Treatment Groups Combined				
Statements Survey	.44**	.32*	.45**	.61**
Situations Survey	.42**	.24	.54**	.57**
Feasibility Scores	.29**	.18	.44**	.32*
Comparison Group				
Statements Survey	.45**	.36	.40*	.72**
Situations Survey	.43**	.26	.45*	.65**
Feasibility Scores	.34**	.17	.49**	.57**
Experimental Group				
Statements Survey	.46**	.26	.70**	.45
Situations Survey	.44**	.26	.67**	.49
Feasibility Scores	.31*	.30	.45	.07

*$p < .05$

**$p < .01$

Table 19

Estimated Mean Scores on Three Attitude Measures for Credit and Non Credit Experimental Junior High Teachers

	Pretest	Posttest	Both times Combined
Statements Survey Scores			
Credit teachers (n = 35)	84.26	89.86	87.06
Non credit teachers (n = 23)	89.51	92.86	91.19
All teachers (n = 58)	86.88	91.36	
Situations Survey Scores			
Credit teachers (n = 35)	347.97	373.69	360.83
Non credit teachers (n = 22)	333.44	364.90	349.17
All teachers (n = 57)	340.71	369.29	
Feasibility Scores			
Credit teachers (n = 35)	64.11	73.37	68.74
Non credit teachers (n = 22)	60.73	70.61	65.66
All teachers (n = 57)	62.41	71.99	

n's) on the Statements Survey, the Situations Survey, and the Feasibility scores. Tables 20, 21, and 22 are summary tables for the credit status x time analysis of variance for the Statements Survey, Situations Survey, and Feasibility scores respectively. No significant effects were found for credit status, or credit status x time. Whether or not a teacher elected to participate in the inservice workshop program for credit or no credit was not significantly related to attitude change during the experimental treatment period.

Morale Among Junior High School Teachers

The Purdue Teacher Opinionaire (PTO) was administered to all teachers in the investigation, both experimental and comparison, for the purpose of obtaining a measure of morale. It was anticipated that teacher attitude toward the integration of reading instruction in content area classrooms might be significantly affected by morale as measured by the PTO. If this were the case, teacher morale could be used as a covariate in an analysis of variance for the effects of the experimental treatment.

Analysis of Morale Measure Scores

Table 23 presents the pre and posttest observed mean scores for both treatment groups at the three sites combined and for each site separately, for the experimental groups only (combined and by site), and for the comparison groups only (combined and by site). Table 24 presents the summary data for a sites x treatment analysis of variance on the pretest scores. Two significant effects were found with regard to these scores: a site x treatment interaction and a site main

Table 20

Credit Status x Time Analysis of Variance
Dependent Variable: Junior High Teachers' Statements Survey Scores

Source	df	MS	F	p
Credit status	1	6.25	< 1	> .05
Error (between)	56	98.30		
Time	1	555.61	13.96	< .001
Credit x Time	1	35.20	< 1	> .05
Error (within)	56	39.80		

Table 21

Credit Status x Time Analysis of Variance
Dependent Variable: Junior High Teachers' Situations Survey Scores

Source	df	MS	F	p
Credit status	1	4556.2	1.98	> .05
Error (between)	55	2302.2		
Time	1	22075.0	24.56	< .001
Credit x Time	1	222.56	< 1	> .05
Error (within)	55	898.64		

Table 22

Credit Status x Time Analysis of Variance
Dependent Variable: Junior High Teachers'
Feasibility Scores

Source	df	MS	F	P
Credit status	1	90.25	< 1	> .05
Error (between)	55	115.58		
Time	1	2481.20	39.59	< .001
Credit x Time	1	2.87	< 1	> .05
Error (within)	55	62.68		

Table 23

Observed Mean Scores of Junior High Teachers on Purdue Teacher Opinionaire

	All Sites Combined		Urban Site Only		Suburban Site Only		Rural Site Only	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Treatment Groups Combined	288.90	288.11 (n = 127)	235.08	231.95 (n = 40)	323.57	324.06 (n = 49)	300.84	300.86 (n = 38)
Experimental Groups Only	284.38	284.33 (n=55)	245.21	239.68 (n = 19)	315.00	317.70 (n = 20)	292.63	295.63 (n = 16)
Comparison Groups Only	293.50	292.93 (n = 70)	223.15	225.11 (n = 19)	329.48	328.45 (n = 29)	306.82	304.68 (n = 22)

Table 24

Sites x Treatment Analysis of Variance of
Junior High Teachers' Purdue Teacher Opinionaire Pretest Scores

Source	df	MS	F	p
Sites	2	111,961.00	108.14	< .001
Treatment	1	66.90	< 1	> .05
Site x Treatment	2	5,248.40	5.07	< .01
Error	145	1,035.40		

effect. The pretest site main effect was that morale, as measured by the PTO, was significantly lower for all subjects at the urban junior high school. Follow-up tests showed that at the urban site the scores of the treatment groups were significantly different, the scores of the comparison group being higher than the scores of the experimental group. However, at the other two sites, pretest scores of the two treatment groups did not differ significantly. The nonsignificant treatment effect indicates that with all sites combined, the treatment groups were not significantly different when the treatment began.

Table 25 presents the summary date for a site x treatment x time analysis of variance on PTO scores. The only significant effect found was that at the urban site morale scores for both treatment groups were significantly lower than morale scores for teachers at the other two sites. Table 26 presents the estimated means for this significant site main effect. Of primary interest, however, is the fact that no significant time effect (pre to posttest difference) was found for PTO scores overall (time main effect) or within sites (site x time interaction) or within treatment groups (treatment x time interaction). Morale, as measured by the PTO, then, held constant across time for all teachers and all sites, being significantly lower for all teachers at the urban site just as established on the pretest.

Correlations Between Morale Scores and Attitude Scores

Tables 27, 28, and 29 present the correlations between scores on the PTO and the three attitude measures. Asterisks denote correlations that are significant. A close examination of these tables suggests that teacher responses on the attitude measures were not significantly

Table 25

Site x Treatment x Time Analysis of Variance
on Junior High Teachers' Purdue Teacher Opinionaire Scores

Source	df	MS	F	p
Site	2	14,802.00	7.00	< .01
Treatment	1	44.08	< 1	> .05
Site x Treatment	2	220.08	< 1	> .05
Error (between Ss)	119	2114.80		
Time	1	1.85	< 1	> .05
Site x Time	2	40.03	< 1	> .05
Treatment x Time	1	3.28	< 1	> .05
Site x Treatment x Time	2	231.49	< 1	
Error (within Ss)	119	238.78		

Table 26

Estimated Junior High Teachers' Purdue Teacher Opinionaire
Means for Only Significant Effect

Site	Urban	Rural	Suburban
	225.17	308.15	320.90

Table 27

Correlations Between Purdue Teacher Opinionaire Scores and Three Attitude Measures for Junior High Teacher Treatment Groups Combined

	Statements Survey Pretest	Statements Survey Posttest	Situations Survey Pretest	Situations Survey Posttest	Feasibility Scores Pretest	Feasibility Scores Posttest
All Sites Combined						
PTO pretest scores	.16	.20	.00	.17	.17	.18
PTO posttest scores	.16	.21	-.02	.16	.14	.18
Urban Site Only						
PTO pretest scores	-.05	.04*	-.09	.23	-.04	.28
PTO posttest scores	-.06	.38	-.04	.13	-.03	.19
Suburban Site Only						
PTO pretest scores	.14	-.02	.08	.09	.31*	.09
PTO posttest scores	.20	.01	.04	.08	.25	.07
Rural Site Only						
PTO pretest scores	.16	.18	.06	-.03	.13	-.08
PTO posttest scores	.09	.29	-.09	09	-.05	.09

Note. Because of incomplete data, n's range from 126 - 130 for all sites combined, 38 - 42 for the urban site, 48 - 49 for the suburban site, and 38 - 39 for the rural site.

*$p < .05$

A.5-67

Table 28

Correlations Between Purdue Teacher Opinionaire Scores and Three Attitude Measures for Junior High Teacher Comparison Groups Only

	Statements Survey Pretest	Statements Survey Posttest	Situations Survey Pretest	Situations Survey Posttest	Feasibility Scores Pretest	Feasibility Scores Posttest
All Sites Combined						
PTO pretest scores	.15	.26*	-.04	.21	.10	.24*
PTO posttest scores	.14	.28*	-.08	.23	.09	.23
Urban Site Only						
PTO pretest scores	-.18	.43	-.20	.01	-.32	.10
PTO posttest scores	-.20	.44	-.06	.03	-.27	.05
Suburban Site Only						
PTO pretest scores	.01	-.08	-.03	.09	.21	.13
PTO posttest scores	.02	-.09	-.05	.15	.17	.15
Rural Site Only						
PTO pretest scores	.22	.27	.01	.14	.16	.07
PTO posttest scores	.23	.34	-.11	.26	.15	.19

Note. Because of incomplete data, n's range from 69 - 72 for all sites combined, and 19 - 21 for the urban site. For the suburban and rural sites, n's remain constant at 29 and 22 respectively.

*$p < .05$

A.5-68

Table 29

Correlations Between Purdue Teacher Opinionaire Scores and Three Attitude Measures for Junior High Teacher Experimental Groups Only

	Statements Survey Pretest	Statements Survey Posttest	Situations Survey Pretest	Situations Survey Posttest	Feasibility Scores Pretest	Feasibility Scores Posttest
All Sites Combined						
PTO pretest scores	.18	.17	.05	.14	.26	.14
PTO posttest scores	.20	.19	.04	.10	.18	.17
Urban Site Only						
PTO pretest scores	-.01	.30	-.01	.34	.22	.43
PTO posttest scores	.06	.25	.02	.19	.22	.35
Suburban Site Only						
PTO pretest scores	.35*	.35	.19	.13	.38	.14
PTO posttest scores	.50*	.49*	.13	.02	.31	.05
Rural Site Only						
PTO pretest scores	.12	.12	.16	-.15	-.05	-.22
PTO posttest scores	-.10	.27	-.04	-.13	-.42	-.02

Note. Because of incomplete data, n's range from 54 - 58 for all sites combined, 19 - 21 for the urban site, 17 - 20 for the suburban site, and 15 - 17 for the rural site.

*$p < .05$

affected by their responses on the PTO. Morale, as measured by the PTO, appears not to have been a significant factor in determining teachers' attitudes toward the integration of reading instruction in the content areas as measured by the three attitude instruments used in this investigation. It therefore seemed unnecessary to analyze the data using PTO morale scores as a covariate to minimize the effect of morale on attitude.

A close examination of the figures in Tables 27, 28 and 29 confirms the minimal relationship found between teacher responses on the PTO and subject responses on the three attitudinal measures. Table 27, for example, indicates that for both treatment groups combined at all sites, correlations between PTO pretest scores and pretest scores on the three attitude measures are .16 for the Statements Survey scores, .00 for the Situations Survey scores, and .17 for the Feasibility scores. Since none of the three correlations are statistically significant, it can be concluded that there is no reliable relationship between responses on the PTO and responses on the three attitude instruments. The generally low relationships become clearer when r^2 is considered, the variance in one variable accounted for by the other. For example, the correlation between PTO pretest scores and posttest scores on the Statements Survey among both treatment groups combined at the urban site is .40. This is the highest correlation found in Table 26, yet $.4^2$ equals .16, which means that only 16% of the variance in Statements Survey post-test scores among all urban teachers in the investigation can be attributed to these teachers' responses to the morale measure.

Tables 28 and 29 present the correlations between the PTO scores and the three attitude measures for the experimental and comparison groups respectively, each of these also broken down by site. These correlations range from -.42 for the PTO posttest scores and pretest Feasibility scores among the experimental teachers at the rural site to .50 for PTO posttest scores and Statements Survey pretest scores among these same teachers. The magnitude of the relationship between measures when considered in terms of variance accounted for (r^2) reaches a maximum of .25 among the experimental teachers at the rural site. Among the comparison teachers, the highest correlation on Table 27 is .43 between PTO pretest scores and Statements Survey posttest scores for urban subjects. The highest percentage of variance in PTO scores among these subjects that can be attributed to morale measure responses is thus 18%.

Skill Levels Among Junior High School Teachers

Hypothesis number two in Chapter One states that a significantly greater number of experimental teachers will attain mastery level of 80% on the posttest administration of a skills test than attain this mastery level on a pretest administration of this test.

Analysis of Skills Test Scores

Hypothesis number two was accepted. Using the McNemar Test for the significance of changes, significantly more teachers changed from nonmastery at pretest to mastery at posttest than from mastery to nonmastery, x^2 (1) = 15.43, $p < .001$ on the Skills Test. Table 30 presents the numbers of teachers reaching mastery on pre and posttest at all sites combined and for each site separately. Of the 56

Table 30

Frequency of Junior High Experimental Teachers in each Combination of Pre and Posttest Mastery Status on Skills Test

		Posttest		
		Nonmastery	Mastery	Total
All Sites Combined				
Pretest:	Mastery	1	2	3
	Nonmastery	33	20	53
	Total	34	22	56
Urban Site				
Pretest:	Mastery	1	0	1
	Nonmastery	18	2	20
	Total	19	2	21
Suburban Site				
Pretest:	Mastery	0	0	0
	Nonmastery	8	12	20
	Total	8	12	20
Rural Site				
Pretest:	Mastery	0	2	2
	Nonmastery	7	6	13
	Total	7	8	15

experimental group teachers who took the test at the first workshop session, only three scored 80% or better. Of these same 56 teachers, 22 reached mastery level of 80% on the posttest given at the final workshop session.

While mastery level is the primary concern when using a criterion-referenced test, it is also of some interest to consider whether or not teachers improved their performance on the Skills Test and to what extent. Table 31 includes the observed or actual mean scores for all sites combined and for each site considered separately. Table 32 presents the estimated mean scores for the data adjusted for unequal n's. These means represent the scores used for a site x time analysis of variance on the Skills Test. Table 33 summarizes this analysis of variance. Significant gains were found between pre and posttest ($p < .001$). Gain was not related significantly to site.

One further analysis of variance was conducted on the Skills Test data to determine whether or not a teacher's decision to participate in the inservice workshop program for graduate credit or non credit was significantly related to changes in Skills Test score. Table 34 presents estimated cell means, for Skills Test scores adjusted for unequal n's, for experimental teachers electing to participate in the treatment for graduate credit and for teachers electing the non credit option. Table 35 summarizes the credit status x time analysis of variance. No significant effects were found for credit status or credit x time. In other words, change in Skills Test scores was not significantly related to whether or not a teacher elected the graduate credit option offered as part of the experimental treatment.

Table 31

Junior High Experimental Teachers' Observed Mean Scores on Skills Test

	All Sites Combined	Urban Site Only	Suburban Site Only	Rural Site Only
Pretest	9.96 (n = 56)	9.33 (n = 21)	10.90 (n = 20)	9.60 (n = 15)
Posttest	16.89 (n = 56)	15.76 (n = 21)	17.90 (n = 20)	17.13 (n = 15)

Table 32

Junior High Experimental Teachers' Estimated Mean Scores on Skills Test Adjusted for Unequal n's

Site:				
	Urban (n = 21)	12.55		
	Suburban (n = 20)	14.43		
	Rural (n = 15)	12.55		
Time:				
	Pretest	9.68		
	Posttest	16.67		
Site x Time:				
	Pretest	Urban: 9.33	Suburban: 10.93	Rural: 8.78
	Posttest	Urban: 15.76	Suburban: 17.93	Rural: 16.31

Table 35

Credit Status x Time Analysis of Variance for
Junior High Experimental Teachers' Skills Test Scores

Source	df	MS	F	p
Credit Status	1	4.00	< 1	> .05
Error (between)	54	15.12		
Time	1	1317.80	193.77	< .001
Credit x Time	1	1.63	< 1	> .05
Error (within)	54	6.80		

Analysis of Perceived Skill Scores

Another dimension of skill is reflected in teachers' responses to the final question included as part of the Situations Survey. For each plan described on this instrument, the teacher is asked to rate his perceived degree of skill at executing the plan presented. It should be noted that only on this skill measure were data collected from both experimental and comparison teachers; on the other two skill measures (the Skills Test and the consultant ratings) data were collected from experimental teachers only. Table 36 presents the observed mean Perceived Skill scores of subjects across sites and for each site considered separately. Table 37 summarizes a site x treatment x time analysis of variance. The increase in Perceived Skill scores from pretest to posttest was greater for experimental teachers ($p < .001$). This differential increase was not found to be related to site. Table 38 presents the estimated Perceived Skill scores, adjusted for unequal n's for the significant effects from this analysis.

Analysis of Consultant Ratings

A final way to look at changes in skill level among teachers participating in the experimental treatment is to consider evaluations made by the on site consultants who observed the teachers at work in their classrooms between workshop sessions. At the end of the treatment period, each consultant was asked to assign an entry rating to each teacher with whom he or she had worked during the year. This rating was based on what the consultant believed to be that teacher's level of skill in relation to the objectives of the workshop program. In other words, teachers' entry ratings reflected the extent to which

Table 36

Observed Mean Perceived Skill Scores of
Junior High Experimental Teachers

	All Sites Combined		Urban Site Only		Suburban Site Only		Rural Site Only	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Treatment Groups Combined	61.60 (n = 129)	69.96	61.76 (n = 42)	71.55	62.79 (n = 48)	68.71	59.95 (n = 39)	69.82
Experimental Groups Only	59.46 (n = 57)	74.91	60.52 (n = 21)	75.48	58.11 (n = 19)	73.21	59.65 (n = 17)	76.12
Comparison Groups Only	63.29 (n = 72)	66.06	63.00 (n = 21)	67.62	65.66 (n = 29)	65.76	60.18 (n = 22)	64.95

Table 37

Site x Treatment x Time Analysis of Variance on Junior High Experimental Teachers' Perceived Skill Scores

Source	df	MS	F	p
Site	2	68.08	< 1	> .05
Treatment	1	70.08	< 1	> .05
Site x Treatment	2	66.08	< 1	> .05
Error (between Ss)	123	229.82	< 1	> .05
Time	1	5434.70	74.78	< .001
Site x Time	2	56.12	< 1	> .05
Treatment x Time	1	2419.20	33.29	< .001
Site x Treatment x Time	2	34.92	< 1	> .05
Error (within Ss)	123	72.68		

Table 38

Estimated Cell Means for Significant Effects From Analysis of Variance on Junior High Experimental Teachers' Perceived Skill Scores

	Pre	Post
Time	61.70	71.00
Treatment x Time		
Experimental	60.70	76.21
Comparison	62.69	65.79

Table 39

Mean Consultant Ratings of Skill Levels for Experimental Junior High Teachers

	All Sites Combined	Urban Site Only	Suburban Site Only	Rural Site Only
Entry Rating	2.20 (n = 58)	1.48 (n = 21)	2.80 (n = 20)	2.41 (n = 17)
Exit Rating	3.54 (n = 58)	2.81 (n = 21)	3.85 (n = 20)	4.06 (n = 17)

Note. Ratings ranged from 1 to 5 with 5 being the highest positive rating.

the consultants believed that the teachers had incorporated reading instruction in their content area classrooms at the beginning of the experimental treatment. An exit rating was also recorded for each teacher which reflected the extent to which the consultants believed that teachers incorporated reading instruction in their classrooms by the end of the experimental treatment. It should be noted that some caution should be exercised in interpreting the analysis of these ratings as they were collected at the end of the treatment period rather than before and after which would have minimized rater bias.

Table 39 includes the mean entry and exit ratings on which a matched pairs t test was used for comparing ratings for all sites combined and for each site separately. Mean exit ratings were significantly higher than mean ratings across all sites, t (57) = -9.851, $p < .001$, and for each site, t (20) = -4.939, $p < .001$ (urban), t (19) = -5.694, $p < .001$ (suburban), and t (16) = 7.99, $p < .001$ (rural).

Thus on three dimensions of skill measured, the data indicate significant changes in skill levels among participants in the experimental treatment group across time.

Correlations Among Skill Measures

Table 40 presents the correlations among these three dimensions of skill measurement. Where correlations are statistically significant, asterisks are used. This table indicates that one of the highest correlations among the skill measures used in this investigation is that between the Skills Test pretest scores and the consultants' Entry Ratings. For all sites combined, for example,

Table 40

Correlations Among Three Skill Measures For Junior High Experimental Teachers

	All Sites Combined		Urban Site Only		Suburban Site Only		Rural Site Only	
	Perceived Skill Scores	Entry Rating	Perceived Skill Scores	Entry Rating	Perceived Skill Scores	Entry Rating	Perceived Skill Scores	Entry Rating
Pretest Correlations								
Skills Test Scores	.17	.34*	.17	.65**	.00	.37	.46	.08
Perceived Skill Scores		-.01		.17		.14		-.23
Posttest Correlations								
Skills Test Scores	.14	.26*	.26	.23	.14	.21	.28	-.08
Perceived Skill Scores		.26		.29		.32		.47

Note. Because of incomplete data the following ranges of sample size apply to this table: n=55-58 for all sites combined; n=21 for the urban site; n=19-20 for the suburban site; n=15-17 for the rural site.

*$p < .05$

**$p < .01$

A.5-82

119

this correlation is .34. However, looking at this correlation for each site separately, the table indicates that only at the urban and suburban sites is this high correlation evident (.65 and .37 respectively) while at the rural site the correlation drops to .08. The wide range in these correlations may reflect the lack of establishing inter-rater reliability with regard to the assigning of ratings by consultants. Table 41 presents the pretest-posttest correlations for each of the three skill measures.

Characteristics, Attitudes, Morale, and Skill Levels of Teachers of Adults

For a variety of reasons, to be discussed in Chapter Five, the Adult Basic Education (ABE) part of the total sample used in this investigation was considerably smaller than anticipated. Attrition among those teachers of adults who began as part of the experimental group was a serious problem as was maintaining a comparison group for pre and posttesting. Because the Adult Basic Education treatment groups eventually maintained were so small, data collected on these groups is reported separately from that of the secondary teacher sample. Meaningful comparisons between groups of such differing size are not suggested. In addition to noting the very small sample numbers for this part of the investigation, one additional caution needs to be made. For the secondary teacher population, only teachers who attended at least ten of the fifteen workshops were considered experimental teachers. Because one of the major reasons for the high attrition rate among the teachers of adults in the experimental group was the problem of attending workshop sessions that frequently conflicted with teaching commitments, it was decided

Table 41

Pretest-Posttest Correlations for Junior High Teachers' Scores on Three Skill Level Measures

	All Sites Combined	Urban Site Only	Suburban Site Only	Rural Site Only
Skills Test Scores	.44**	.23	.63**	.47
Perceived Skill Scores	.23	.18	.16	.42
Entry-Exit Ratings	.56**	.38	.52*	.45

*$p < .05$

**$p < .01$

to consider as an experimental teacher any Adult Basic Education teacher who attended at least six of the workshop sessions.

For the tables presenting data on the experimental group of Adult Basic Education* teachers, only one breakdown is considered among the small total population of eight, that of credit versus non credit. Because this category distinction has been made for the secondary teacher sample and was a source of some difference in terms of completion of workshop objectives and attendance, the group of teachers of adults was divided in the same way. Again, however, considerable caution needs to be exercised in interpreting the tables which include this breakdown because of the very small total sample. No attempt was made to determine statistical differences for this breakdown of credit versus non credit. The information is provided for descriptive purposes only as is much of the data for this part of the investigation.

Characteristics of Teachers of Adults

Table 42 presents summary descriptive demographic information gathered on Adult Basic Education subjects for whom both pre and posttest data were available. The Fisher exact probability test was used to determine whether differences in the two groups were statistically significant. No significant differences were found between the treatment groups on the variables included in this table. Information on content areas represented by the Adult Basic Education subjects in both treatment groups was collected and analyzed and two significant differences were found between the experimental and comparison groups. A significantly higher number of comparison Adult Basic Education teachers reported that they

*The term Adult Basic Education was defined in Chapter 1 of this project to include teachers of Adult Basic Education, General Educational Department and English as a Second Language.

Table 42

Summary Demographic Information on Experimental and Comparison Adult Basic Education Groups

	Experimental (n=8)		Comparison (n=9)	
	f	%	f	%
Number of years teaching experience:				
0 - 3 years	2	25.0	1	11.1
4 - 7 years	2	25.0	3	33.3
8 - 11 years	1	12.5	2	22.2
12 - 15 years	2	25.0	3	33.3
more than 15	1	12.1	0	0
Level of education:				
high school graduate	0	0	0	0
some college work	0	0	0	0
undergraduate degree	4	50.0	4	44.4
master's degree	4	50.0	5	55.6
doctorate	0	0	0	0
College credits beyond undergraduate				
0 - 10	1	12.5	1	11.1
11 - 20	1	12.5	1	11.1
21 - 20	1	12.5	3	33.3
31 - 50	2	25.0	2	22.2
more than 50	3	37.5	2	22.2
Credits earned in reading instruction				
0 - 6	5	62.5	6	66.7
7 - 12	2	25.0	2	22.2
13 - 18	1	12.5	1	11.1
19 - 24	0	0	0	0
more than 24	0	0	0	0

taught math and special education than experimental teachers ($p < .05$). Some caution should be exercised in considering this significant difference in that there was some confusion on the part of the teachers of adults who completed the questionnaire as to how to respond to the questions dealing with content areas taught. Many of these teachers reported that they taught in a substantial number of the categories or were unsure exactly how to respond to the questions. They apparently confused the content areas they taught as full time junior high school teachers with what they taught as part time teachers of adults.

Table 43 presents comparison data between those experimental Adult Basic Education subjects who elected one of the credit options and those who elected to attend the workshop for no credit. These subjects are compared on various aspects of the experimental treatment. For example, of the eight experimental subjects, only two elected to complete the workshop program for graduate credit, and one of these two teachers was the only Adult Basic Education teacher who completed enough of the required objectives to earn a certificate of completion. In other words, none of the teachers of adults attending the workshops as non credit subjects completed enough work to earn a certificate. In fact, of the six non credit Adult Basic Education teachers, the mean number of skill level objectives completed was 2.33 out of a possible total of 9 objectives.

Attitudes and Morale of Teachers of Adults

Table 44 presents pre and posttest observed mean scores on the three attitude measures and the Perceived Skill scores for the total Adult Basic Education sample. Tables 45 and 46 present the pre and

Table 43

Credit Versus Non Credit Adult Basic Education Teachers Compared on Variables of Completion of Objectives and Workshop Attendance

	Total Completing Skill Level Objectives	Mean Number of Skill Level Objectives Completed	Total completing Classroom Application Objectives	Total Eligible for Certificate of Completion	Mean Number of Objective Completed of Possible 13	Mean Number of Workshop Attended of possible 15
ABE Teachers electing 3 or 6 credit option (n = 2)	1	8	2	1	12	12.5
ABE Teachers electing non credit option (n = 6)	0	2.33	0	0	2.5	9.67
Total ABE Teachers (n = 8)	1	3.75	2	1	4.88	11.5

Table 44

Observed Mean Scores on Four Measures for Total Adult Basic Education Samples (n = 17)

	Pre	Post
Statements Survey	88.882	89.059
Situations Survey	341.647	334.529
Feasibility Score	63.824	63.294
Perceived Skill Score	58.647	65.118

Table 45

Observed Mean Scores on Four Measures for Comparison Adult Basic Education Group Only (n = 9)

	Pre	Post
Statements Survey	91.333	90.556
Situations Survey	344.667	319.333
Feasibility Score	63.889	57.778
Perceived Skill Score	63.556	65.778

Table 46

Observed Mean Scores on Four Measures for Experimental Adult Basic Education Group Only (n = 8)

	Pre	Post
Statements Survey	86.125	87.375
Situations Survey	338.250	351.625
Feasibility Score	63.750	69.500
Perceived Skill Score	53.125	64.375

posttest observed mean scores on these measures for the comparison and experimental groups separately. Mean scores on the Purdue Teacher Opinionaire are not included because pre and posttest data were available for only four subjects. Also, as discussed in Chapter Five, this measure proved to be inappropriate for teachers of adults and was therefore not included in the analyses of data for this part.

Tables 47, 48, and 49 are summary tables for a time x treatment analysis of variance of the three attitude measure scores of Adult Basic Education teachers. No significant effects were found.

Skill Levels of Teachers of Adults

Table 50 presents the pre and posttest mean Skills Test score comparisons for the Adult Basic Education experimental group. No experimental teacher reached mastery level of 80% on the pretest. Two of the six teachers with complete pre and posttest data reached mastery on the posttest. Looking at mean scores indicates the extent of actual improvement among these teachers on the Skills Test. Table 50 indicates that for the total experimental Adult Basic Education group, the pretest mean score of 7, out of a possible 23, increased to a posttest mean of 14.50. This difference was significant, $t(5) = 5.07$, $p < .01$. Again, however, caution is advised in interpreting these findings because of the small sample on which they are based.

Table 51 presents data on the two other dimensions of skill analyzed in the investigation. Mean pre and posttest Perceived Skill scores are presented with mean consultant entry and exit ratings.

Table 47

Treatment x Time Analysis of Variance of
Adult Basic Education Teachers' Statements Survey Scores

	df	MS	F	p
Source:				
Treatment	1	30.25	< 1	> .05
Error (between)	15	55.36		
Time	1	.47	< 1	> .05
Time x Treatment	1	8.71	< 1	> .05
Error (within)	15			

Table 48

Treatment x Time Time Analysis of Variance of
Adult Basic Education Teachers' Situations Survey Scores

	df	MS	F	p
Source:				
Treatment	1	441.00	< 1	> .05
Error (between)	15	3270.80		
Time	1	302.83	< 1	> .05
Time x Treatment	1	3172.90	1.49	> .05
Error (within)	15	2126.80		

Table 49

Treatment x Time Analysis of Variance of
Adult Basic Education Teachers' Feasibility Scores

	df	MS	F	p
Source:				
Treatment	1	20.25	1	.05
Error (between)	15	173.58		
Time	1	.28	1	.05
Time x Treatment	1	297.92	3.65	.05
Error (within)	15	81.61		

Table 50

Adult Basic Education Experimental Teachers' Skills
Test Results (n = 7)

	Total Reaching 80% Mastery Level		Mean Score of Possible 23 points	
	Pre	Post	Pre	Post
Teachers electing credit option (n = 2)	0	0	3	11.5
Teachers electing non credit option (n = 4)	0	2	9	16.0
Total ABE teachers (n = 6)	0	2	7 (SD=4.09)	14.50 (SD=3.94)

Table 51

Adult Basic Education Experimental Teachers' Mean Perceived Skill Scores and Mean Consultant Ratings

	Mean Perceived Skills Scores		Mean Consultant Ratings	
	Pre	Post	Entry	Exit
Teachers electing credit option (n = 2)	53.5	62.5	1	1.5
Teachers electing non credit option (n = 6)	53	65	1.83	2.33
Total ABE Teachers (n = 8)	53.12 (SD=11.37)	64.38 (SD=10.76)	1.625 (SD=.74)	2.125 (SD=.83)

Differences between pre and posttest Perceived Skill scores were not statistically significant, $t(7) = 2.275$, $p > .05$. Differences between entry and exit consultant ratings were also not statistically significant, $t\ (7) = -1.87$, $p > .05$.

Table 33

Site x Time Analysis of Variance
of Junior High Experimental Teachers' Skills Test Scores

Source	df	MS	F	p
Site	2	35.23	2.43	>.05
Teachers/Site	53	14.49		
Time	1	1344.10	196.02	<.001
Site x Time	2	2.71	< 1	> .05
Error	53	6.86		

Table 34

Estimated Cell Means for Skills Test Scores
For Credit and Non Credit Experimental Teachers

	Pretest	Posttest	Both Times Combined
Credit Teachers (n = 33)	9.70	16.42	13.06
Non Credit Teachers (n = 23)	9.91	17.12	13.52
All Experimental Teachers (n = 56)	9.80	16.77	13.52